THE HEALTH MAGAZINE

HYGEIA

Medical Library

Why Other People Smell

JANUARY · 1941 · 25c

If Good Health came in a package . .

How simple it would be! "A box of health, please! Gift-wrap and deliver it to my family." And with that box would go your fervent wish for a lifetime's enjoyment.

But *good health* is not a gift you can give. No, unfortunately, good health, and all it implies—physical fitness, mental alertness, emotional stability—can't be wrapped in tissue, tied with ribbons and hung on a Christmas tree.

It *is* possible, however, to improve and safeguard physical well-being with intelligent health knowledge and care. And today, more than ever, people do have an earnest, sincere interest in obtaining authentic health facts. That's why HYGEIA makes such a truly thoughtful gift welcome in any home. Its sound, helpful information can be a daily aid in solving those personal problems of health and hygiene. Its wide range of material each month makes it an excellent guide in building the health and happiness of the whole family. Make it a real "Merry Christmas" for those you love—give a subscription to HYGEIA!

Simply list the names and addresses of those you'd like to receive HYGEIA the coming year. Mail them with your remittance today—and save yourself a lot of Christmas shopping worries! Attractive greeting cards will notify each person of your gift. Take advantage of the special rates!

Coming in 1941

THE ELDER SHALL SERVE THE YOUNGER—Herman Jahr.

How does little Dorothy accept the arrival of her new baby brother? An interesting study of the behavior problems arising with the arrival of an "addition" to the family. A must article for all parents.

HOSPITALS AND CHANGING TIMES—Richard H. Hutchings, M.D.

How do hospitals of today compare with those of yesterday? A study that will leave you grateful you're living in the present era.

EDUCATING THE HANDICAPPED—Frank L. Beals.

Is the handicapped child benefited by being placed in school with normal children? Can the present school system meet the needs of the handicapped? A school administrator speaks in light of his own experiences.

DREAMS HAVE A MEANING

Are dreams unfulfilled wishes — or are they merely random thoughts? What causes dreams? An intelligent, interesting discussion of this ever-new, ever-old subject.

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BABIES SUPERVISED BY PHYSICIANS ARE BETTER BABIES

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FORECAST

In "Health and the National Defense," appearing next month, William J. Hutchins, President Emeritus, Berea College, Kentucky, says: "The defense of our nation cannot be entrusted to a race of adult morons, whose children are spawned into the world to die like flies. The nation's defense cannot be entrusted to men, such as fill the venereal wards of our hospitals, such as filled the venereal sections of our army camps in the Great War. No more can our nation's defense be entrusted to men whose gangs surround our saloons and pool rooms, whose sole evidence of will power is the tenacity with which their teeth hold their cigarettes."

Read this provocative article of an America that is still on the threshold of an imminent cataclysm.

Do dreams really have a meaning, or are they the byproduct of indigestion, hard beds, or cold feet?

The nineteenth century scientists defined these dreams as nonsensical creations of a mind running wild in sleep, unguided by reason. But since then, it has been proved that dreams, when properly studied, reveal the depths of the soul, the bedrock of man's nature.

This enlightening article by Smiley Blanton, M.D., will help you unravel last night's nightmare.

There has been a great deal of controversy concerning the educational segregation of children who are handicapped in various ways. New York's Mayor La Guardia, not long ago, condemned teachers who believed that handicapped children should be segregated from normal children in order to give them the benefits of an education.

Frank L. Beals, Assistant Superintendent of Chicago's Schools, a proponent of separate education, voices an airtight opinion.

Don't make the tragic mistake of ignoring the danger signs of your child's "growing pains" Grace Igo Hall says. They are not characteristic of adolescence; healthy children do not have them. There are many pitiful cases of children whose parents have disregarded these warning symptoms—symptoms which usually follow rheumatic fever and which may appear many years later.

Rheumatic fever takes its largest toll between the ages of 6 and 15, kills one child out of every hundred.

Louis F. Bishop, M.D., and Ruth V. Bennett simplify the mechanics of an electrocardiograph, a delicate, electrical device for measuring the heart's action.

The electrocardiogram, an autograph or record of this action, is interesting and highly variable, for the heart writes its own story, and, indirectly, the story of the whole body.

HYGEIA

THE HEALTH MAGAZINE

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Unsolicited manuscripts will be considered by the Editor but must be accompanied by a stamped self addressed envelop to insure return if rejected. Manuscripts should be typewritten, double-spaced, and the original, not the carbon copy submitted. All rights reserved.

He's grown seven inches this first year!

But more important, look at his well-shaped head, full chest, sound, even teeth. They show his bones and teeth are growing right, too! To aid in building them, he needs plenty of Vitamin D—more than sunshine, alone, provides these winter months. Because Squibb Cod Liver Oil supplies this extra Vitamin D, he's been taking it *every day* . . . since he was three weeks old!

sound, even teeth

Your baby's milk and vegetables provide minerals to help build sound, even teeth. But he needs Vitamin D, in addition, to help turn these minerals into hard tooth structure. Give him Squibb Cod Liver Oil!

a straight, strong back

Don't prop your baby up with pillows before he can sit alone. This may lead to a round back and poor posture. Instead, help him build a straight, strong back. Squibb Cod Liver Oil, daily, provides the Vitamin D he needs to help his back grow strong and straight.

Vitamins guarded! You get your money's worth!.... When you insist on *Squibb* Cod Liver Oil for your baby, you get full value of Vitamins A and D. You receive every bit of the vitamins you are paying for. One teaspoonful of the Squibb Oil provides twice as much Vitamin A and three times as much Vitamin D as a cod liver oil which meets the minimum requirements of the U. S. Pharmacopeia. It's an economy to buy Squibb Cod Liver Oil. Ask for it now at any drug store....*The priceless ingredient of every product is the honor and integrity of its maker*

SQUIBB *Cod-Liver Oil*

"The Adcomber"

looks at Hygeia ads

A word to parents of school age youngsters! GUILD OPTICIANS have a most worthwhile booklet for you. It's called "Care of Children's Eyes." Write your nearest Guild Optician for a *free* copy. See pages 52 and 53 for his name and address!

—:—

Is your family getting their quota of Vitamin D this winter? Why take chances? Give them the extra protection offered by Vitamin D Milk. Get up to date on Vitamin D Milk and its rich benefits through literature offered by the Wisconsin Alumni Research Foundation, page 69.

—:—

Another sure way to provide an abundance of Vitamin D is with the General Electric Sunlamp. See it demonstrated! Discover how easy it is to own! The coupon on page 41 will bring you the new G-E booklet on Vitamin D—also your "Tel-A-Hite" Tape.

—:—

Believe me, real ingenuity has gone into the making of the MODERN MOTHER NURSING BRASSIERE. Interchangeable sterilized pads see to it that no unsanitary conditions result. All excess milk is instantly absorbed. Loads more details on page 76.

—:—

Tsk, tsk, chapped hands? Don't worry! Let Nivea Skin Oil or Cream help recondition your skin . . . make it soft and lovely again! Samples of these products—also the Basis Soap are entirely *free*. See page 70!

—:—

Be your own Santa Claus this year. Treat yourself to a generous supply of Luzier's luxurious cosmetics. Mail a card for complete literature or a Luzier representative. Address on page 75.

—:—

For fastidious women—men, too—may I suggest the new NON-SPI? It's a safe, effective deodorant cream that affords real protection against that most heinous of all social errors—body odor. Non-Spi samples are free! See page 61.

—:—

Women who have tried TAMPAX say they are thrilled with the new-found freedom it offers. Such complete comfort! 10c and the coupon on page 55 brings you a generous trial sample package.

—:—

Here's one Christmas present that will bring joy to two. A TAYLOR-TOT for baby's pleasure will also do a lot toward making mother's day much easier. It is pictured on page 71. Write for information.

—:—

In case you missed Dr. James Tobey's article on Toast in the November Hygeia —write the American Institute of Baking for one or several copies of it. Use coupon attached to their ad on page 51.

THE ADCOMBER.

Who's Who IN HYGEIA

No newcomer to HYGEIA's Authors' Circle is HOWARD W. HAGGARD, M.D. He was born in 1891 at South Bend, Indiana, and graduated from Phillips Exeter Academy in 1911. He received his Ph.B. from Yale in 1914, and his M.D. from the same university in 1917. His article, "Why Other People Smell," appears on page 12.

During World War 1 he was a captain in the Chemical Warfare Service. Dr. Haggard has been on the Yale faculty since 1919, and at present is a professor and the director of the Yale Laboratory of Applied Physiology.

He has done much research and has written many scientific papers dealing with the fields of noxious gases, alcohol, anesthetics, industrial fatigue, etc. Dr. Haggard has written many popular books, the best known of which is "Devils, Drugs and Doctors."

Dr. Haggard lists as his hobbies the widely divergent greenhouse culture of flowers and deep sea cruising.

In presenting her "Curriculum Vitae," GRACE RUBIN-RABSON, author of "Intelligence Quotient," page 38, says that it is not particularly sensational, but that it is reasonably satisfactory. She has had the usual school experiences both in New York and New Jersey, with concomitant music training through the years. She has been playing and teaching piano for almost as long as she can remember, having started with her first pupil when she was 13 years old. After college, she taught music in the New York City high schools and piano at Hunter College, New York.

She received her Ph.D. at Columbia University, New York, in psychology. Since then she has been combining music and psychology in experimental research, and has published about a dozen articles in this field. Meanwhile, her musical activities continue on the same professional basis as before.

Both she and Dr. S. M. Rabson, author of "Brucellosis," HYGEIA, November 1940, have studied abroad, he doing pathology, while she did music and languages. She has traveled widely, mainly in Europe but with brief sorties in South America, Canada and the United States.

JESSE G. M. BULLOWA, M.D., author of "Pneumonia," page 8, was born in 1879 in New York City. He received his B.A. from the College of the City of New York in 1899, and his M.D. from the College of Physicians and Surgeons, Columbia University, New York City, in 1903.

Since 1928 he has been professor of clinical medicine for the University and Bellevue Hospital Medical College, New York University (now New York University College of Medicine).

He is a contributor of numerous technical articles on pneumonia, segment reflexes and acute infectious diseases. Dr. Bullowa has translated Bechhold's "Colloids in Biology and Medicine," and is author of "Management of the Pneumonias," published by the Oxford Press.

GEORGE ADAMS, author of "Hand Made Mercy," page 18, writes from Baltimore, Md., that he was born in 1909. He was educated at St. Paul's and at Harvard. A traveler, novelist and archeologist, he has explored in Northeastern Alaska, Central America, the Philippines and in the north central portion of Australia. At present, Mr. Adams is a volunteer staff writer for the American Red Cross. He is also attending officers' training school, third corps area, Baltimore, Md., and will be officially inducted into the United States Army on January 3, 1941.

LETTERS FROM *Readers*

They Show Us Miracles

To the Editor:

I have been greatly interested in many articles in HYGEIA, but especially so in "They Show Us Miracles" in the November issue. I feel that the facts therein expressed should be widely distributed and, in fact, an effort of national scope should be made to give them the greatest publicity. I feel that there are many who have a desire above selfish interests for those less fortunate who must labor under this handicap.

I am not a physician nor a psychiatrist; just a plain business man and have often observed this handicap which those treated in mental hospitals must labor under, and have wondered if there was no help for it.

This interest has been greatly increased in the last two years by personal contact with one who has had much to overcome in this line.

Needing some one in my insurance office to relieve me of many details in connection with it, I had an application from a young lady who was very eager to secure the position, and seeing this disposition I gave her the place. At the time I knew nothing of her having been treated mentally but in a short time she gave me, voluntarily, unhesitatingly, a history of her case and the handicap under which she labored. I told her at the time not to allow this to weigh on her mind as our work would proceed just the same as if her treatment had been for typhoid or appendicitis or any other ordinary hospital treatment.

This has been almost two years ago, and many times since I have been very glad that I did not allow it to interfere, for the great progress that has been made with the work and in overcoming this feeling of diffidence has been more than satisfactory and has certainly justified any small degree of patience necessary on my part.

Feeling this way, I hope you will transmit this letter to the Organization "Recovery, The Association of Former Patients of the Illinois Psychiatric Institute" and I would like a copy of the magazine they issue and would like to subscribe for it.

My experience has given me much greater interests along this line and I would certainly be glad to help, in any way possible, the spread of this movement and the change of our laws in regard to mental commitment and treatment.

>> For obvious reasons the name and address of the writer have been withheld.—ED.

Brucellosis

To the Editor:

I believe in September 1936 HYGEIA contained an article on Undulant Fever—The Plague of Malta. Would it be possible for you to furnish me with that issue, or a copy of that particular article? It was by far the best article I have ever read on Undulant Fever and having a son 14 years old who has had a chronic case since he was 5—and not recognized until he was 9—I feel that I want my friends to know about this disease.

The ignorance concerning Undulant Fever, especially in a rural community such as I live in, and where raw milk is not only sold but used to make ice cream and cottage cheese for Church suppers, seems alarming. I wish that more could be done to educate people concerning Undulant Fever.

FRANCES B. GEBHARDT

Clinton, N. J.

Travel in the Tropics

To the Editor:

Dr. Z. Bercovitz shows in "Travel in the Tropics" how well he knows the typical American—tender skin, delicate digestion, nervous unadaptability. However, he forgets that most American tourists are of the tour guided, cruise carried variety, rarely going as far as a dozing scorpion's range from auto, ship or plane. Please communicate to the less timid of these adventurous creatures that he has greatly exaggerated the Equatorial bogies. Life for us torridians does not entail any more care than they are wont to take in their frigid winters. Heat and cold both require their special habits. Yes, cook or boil all food—except those intense taste thrillers, our tropical fruits "with unbroken skins." Daily take a shower or showers. At night, separate the metal bed from the walls in a screened room. That's all. Nowhere else outside the United States was Prohibition deemed necessary. If flies are so social with you, why should they be any different here? Above all, let your readers mind their "mental adjustment." Otherwise they won't like us and we certainly won't wish them "Hasta la vista."

AGUSTIN MURILLO

Bogota, Colombia

Rice Products

To the Editor:

I am interested in your article on Rice Products on page 993 of your November issue. On the following page you have an analysis of wild rice in which you give 1.6 per cent carbohydrate as the carbohydrate content. I am wondering if this is a misprint. I wish to know if this is correct, as I am on a low carbohydrate diet and consequently rice is prohibited. I notice that all the figures on rice total 100, except the wild rice, and for that reason I thought there might be some mistake.

M. S. S.

Washington

This is a typographical error. There is also another error in the crude fiber figure. The composition of wild rice should be as follows:

	Per Cent
Moisture	9
Protein	15
Fat	0.8
Crude fiber	1.4
Carbohydrates	72.3
Ash	1.5

—ED.

H. Armstrong Roberts

Healthy children are not as easily upset as many parents believe. The child who is not greatly disturbed is likely to ask few questions concerned with sex.

Sex Curiosity in Children

THERE IS hardly a parent who is not disturbed at one time or another by the extraordinary questions of children. Even the smallest of children will ask about some of the specific processes associated with the changes of the body, and particularly with birth. The physicians who have been making a study of this question, aided by grants from several foundations concerned with child psychology, point out that these questions do not mean that the child is especially interested in sex, or in its excretions, but really represents experiments in the art of conversation. The parent who has helped the child to express himself on many other matters becomes embarrassed, apprehensive, or even shocked. The child has asked all sorts of questions on other occasions simply because the occasion focused his attention on the subject. The child who sees a litter of kittens for the first time, or who hears about a new baby in the neighborhood, or who happens to overhear discussions in the home is really being normal when he asks questions. For example, a little girl is taken to a pet store where her mother purchases a kitten. The little girl asks if she buys this kitten, where will they get another. Where do the kittens come from? The mother becomes embarrassed and replies, "I will tell you later." Certainly this is the wrong attitude. The same little girl learned later that the cat ate birds and asked, "Where do the birds come from?" Her mother told her that birds lay eggs, which the mother bird hatches. The little girl was extremely bored and said she knew all about that.

The difficulty is, of course, that the apprehensive parent is thinking far beyond the scope of the knowledge of the child and is trying to discourage natural curiosity instead of taking advantage of such curiosity for reasonable enlightenment. The average child soon learns to accept the fact that grown-up people have their own rules and that one of the rules in some homes is that all talk of sex is forbidden. Dr. Jacob H. Conn of Baltimore points out that such parental attitudes help to sensitize the child so as to make many things appear indecent which are actually normal. The attempt to explain development by analogies with seeds and flowers is not always successful, and frequently creates misapprehensions about eating which persist in after life.

Healthy children are not as easily upset as many people believe. The child who is not too much disturbed is likely to ask few questions concerned with sex. This fact is in contrast to the opinions of many parents who have been led to believe that unless special precautions are taken to check the curiosity of children, parents will be deluged with embarrassing questions. The average child is not interested in a complete examination of the body. The scope of his interest in matters of sex, like the growth of his appetite and height, increases as the child grows older. The information that the child requires cannot be given in one discussion, according to modern investigators, any more than can all of the vitamins required throughout life be obtained in one meal.

Indeed, Doctor Conn gives some exceedingly good advice when he says, "All parents might profit if they could stop being fortune tellers and cease peering into the future for the purpose of preventing calamities which probably never will happen. In any case, the most apprehensive parent can learn to appreciate the fact that the child is not as fragile a creature as some persons make him out to be. He should remember that in the serious business of life, collections of words count for much less than training for effective living." Incidentally, a series of scientific names given to the child will not immunize the child against the language of the street. The child may need both sets of terms to have an effective understanding of his development. Thus, Doctor Conn states, "The parent in the average home, who is doing his best to give the child an opportunity to express himself and to share in the common experiences of everyday life, may justifiably feel that he has made a most significant contribution to the health and happiness of his children."

BEFORE modern treatment of the pneumonias doctors practiced "expectant" methods, though, from time to time, various drastic treatments such as blood-letting and purging had been used. Patients were kept in stuffy rooms to prevent chilling and on inadequate liquid diets to keep the fever down. For the modern specific treatment of the pneumonias to emerge, the bacteriologic and physiologic eras were needed.

Osler, a leader of medical practice in this country and in England of a generation past, realizing his own helplessness, said there were patients with pneumonia who were fated to get better regardless of the physician's care, and those who will die not withstanding treatment. In a small number of cases, he thought, the ultimate event might be influenced by the doctor's ministrations. In his time, and until the modern treatment was developed, 1 in 4 patients with pneumonia died. In crowded municipal hospitals the rate was 1 in 2 or 3. Physicians correctly stated that the fate of the patient depended more on the nursing care than on the remedies used. This was not only a tribute to the nurse, but also an actual acknowledgement of ignorance.

Various bacteria may cause the inflammation of the lungs resulting in a condition which is known as pneumonia. The most frequent causes of pneumonias are the pneumococci and physicians now recognize some 50 different varieties. The distinctive character of a pneumococcus depends on the special composition of a carbohydrate or starchy substance which exudes from and surrounds the organism, forming a capsule. This substance augments the virulence of the bacteria and organisms without capsules are not virulent. The amount of carbohydrate or capsular substance and the firmness with which it is attached to the cell often varies. When the bacteria are introduced into a host, whether human or animal, the tissues of the specific capsular carbohydrate produce a neutralizing substance called an antibody or antisubstance, which unites with the germs. These two substances form a combination which swells and makes the capsulated bacteria stick together or agglutinate.

In pneumonia, the pneumococci multiply in the lungs after being inhaled from the upper air passages with air containing infected droplets from coughing carriers, or patients. The disease may also be carried by infected hands and the air passages may have been prepared by being inflamed and deprived of defenses by the virus of a common cold, or some other infection such as grip or influenza. The irritation from the bacteria causes the blood vessels of the lungs to dilate; the blood serum leaves its normal channels and goes into the tissues and into the lung alveoli or air sacs which become blocked so that the necessary exchange of gases is hindered. Sometimes the bacteria pass into the blood and may lodge in distant parts of the body. Unless the bacteria are overcome they compete with the host for life and may cause his death. The patient or "host" responds by mobilizing cells called macrophages to attack the bacteria, and by stimulating the bone marrow so that phagocytes or white blood cells are produced and enter the circulation. The bacteria, however, cannot be successfully attacked by phagocytes unless their capsules become swollen. Some body tissues make the antibodies which cause swelling. The tissue defenses may fail because they are mobilized either too slowly or insufficiently. Also, there may be a "fifth column" of constitutional debility or disease which surrenders under the increased strain of the acute infection. The fate of an infected patient hangs in the balance—on one side is the infecting germ, on the other side the patient's resistance to it.

The modern treatment of the pneumonias includes a specific therapy directed against the invading germs and planned to support the resisting host. It is a battle of position. The invaders which have come through the air are weakened by the sulfanilamide drugs. The most important of these drugs in the treatment of the pneumonias are sulfapyridine and sulfathiazole. They have the ability to depress or kill pneumococci and streptococci. These drugs interfere with the ability of pneumococci to grow. If the pneumococci are not too many or too virulent, they die and the patient recovers. If the organisms are less virulent, the patient's natural defenses complete the work. Pneumococci which have been made less virulent because of the presence of antibodies or sulfanilamide drugs grow in chains or, with antibodies, the capsules may be large and the pneumococci clumped. With the use of drugs, the contents of the cell may drop out and the capsules remain. The concentration of a drug necessary to depress the pneumococci depends on the type and strain of pneumococcus and their previous encounter with the drug. If the pneumococci are exposed to a concentration of a drug which is not

PNEUMONIA

By JESSE G. M. BULLOWA

The concentration of a drug necessary to depress the pneumococci depends on the type and strain of the invading organism and its previous encounter with the drug.

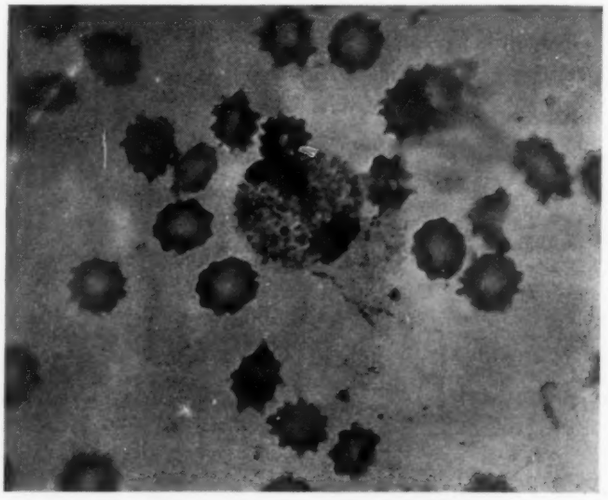
promptly fatal, they may become immune to it so that a greater concentration will be necessary than would have been ample to destroy them if applied at the beginning.

If the organisms are not destroyed by the combined action of the drug and the natural body defenses, or if they lodge in serous cavities such as the pleura or the covering of the heart, or become walled off in an abscess, they will flourish for a time. Later, some become dissolved or autolysed. Then substances are liberated which destroy the activity of the drug and stimulate surviving organisms to increased growth. Accordingly, the drug must be given in large doses from the start and continued with a dose sufficient to maintain a concentra-

tion in the tissues which shall stop the growth of pneumococci, yet not in such a large dose as will produce poisoning. The drug must be continued, too, long enough to kill all the pneumococci, but usually no longer than four days. The sulfanilamide drugs may cause acute symptoms such as severe depression or irritation of the nervous system, with headache, nausea and vomiting. Though such symptoms, or the effects on the blood, may be serious at times, symptoms other than nausea and vomiting are infrequent when the drugs are given under the guidance of physicians trained to use them properly and to observe patients carefully for warning symptoms and signs of damage.

By the use of the sulfanilamide drugs, the physician weights the balance in favor of the patient by reducing the vitality of the pneumococci. In this way he either destroys the germs completely, or the patient destroys them by means of his natural defenses. The balance may be tipped in the patient's favor in another way: The natural defenses of the patient may be augmented by supplying antibodies vicariously produced in animals. Ordinarily these antibodies appear in the body and may be detected after seven or eight days. The physician may supply them early so that there is less strain on the patient's resistance. When the antibodies unite with the soluble carbohydrate of the pneumococci, they interfere with the growth of the bacteria and make conditions favorable for phagocytosis by devouring cells, or solution by acids which appear in the lung. Swelling of the capsules of the pneumococci is necessary for phagocytosis. Unless the organisms are sensitized by either autogenous or introduced antibodies, phagocytosis does not occur. It has been shown that the combined action of antibody and sulfanilamide drugs is more effective than either substance when used alone. A concentration of drug which might be ineffective without antibodies may, with them, destroy all the pneumococci.

In serum therapy, patients are given antibodies which are produced in horses or rabbits in response to spaced doses of the specific pneumococci killed with a solution of formaldehyde. The antibodies produced by rabbits are able to penetrate human tissues more readily than those produced by horses. Much has been learned about the refinement of the antibody so that it may be given with safety and in large doses. At present one or two doses may be sufficient. When the rabbits have received a course of injections their serum is tested for its antibody strength. When the strength is sufficiently great, the rabbits are bled every two weeks and their serum is collected. Then it is treated with chemicals so that the portion which contains the antibodies is separated from the part that is inert. Substances which ordinarily would cause chills are also removed. The serum, refined and concentrated, is then tested for its strength. The best rabbits' serums today contain from 5000 to 7000 units per cubic centimeter. A unit of antibody is sufficient to protect a mouse weighing two thirds of an ounce from a million fatal doses. The usual dose required for patients, when it is given to an adult in the early days of illness, is 200,000 units when strong rabbit serum is employed, or about an ounce. The serum is usually clear or opalescent. It is most economically given and most effective when introduced directly into the veins. Before the serum is given, it is necessary to know precisely the type of



White blood cells destroy invading pneumococci

pneumococcus causing the pneumonia, because each pneumococcus requires a particular kind of serum produced by injecting the same kind of pneumococcus into horses or rabbits.

The physician determines the type of pneumococcus or other bacteria causing the pneumonia by studying the sputum or expectoration, or by culturing the blood to reveal the specific cause of the pneumonia. The sputum is usually scant, bloody or rusty, and tenacious. All sputum from a patient suspected of having pneumonia, or who is expectorating tenacious,

Besides the use of specific remedies, which depress the pneumococci and augment the resistance of the patient, the modern treatment of pneumonia includes the immediate and extensive administration of oxygen.

rusty colored material, should be collected in a glass, wide-mouthed bottle or in a paper cup so that the physician may inspect it and send it to the laboratory for study. If sputum has been discarded or collected on a cloth or tissue, valuable time and even all opportunity to obtain suitable sputum may be lost. Though most patients recover when the sulfanilamide drugs are given, there are those whose infecting pneumococci are resistant to them and valuable time will be saved if the sputum is collected before the drugs are given. Some patients cannot be given the drugs because of their condition and they may be saved by serum. By testing the patient with rabbit serum, or with horse serum, depending upon which is to be used, it may be determined whether the patient is acutely sensitive to them (anaphylactic). This is done by dropping serum into the patient's eye, or injecting a small quantity into the skin. When the patient is sensitive to serum, the eye into which it has been dropped, or the skin about the point of injection, becomes inflamed within twenty minutes. Even after this test, a small initial dose should be given to determine the patient's reaction to the serum before a larger dose is used. Good serums should not give chills or fever. Patients who are not sensitive to animal serums may, nevertheless, have chills or fever from some serum because of the way it has been prepared or given. A dose of serum sufficient to produce an excess of antibodies in the blood is usually sufficient to make the patient feel perfectly well with a normal pulse, temperature and breathing. The earlier the serums, as well as the chemotherapeutic (sulfanilamide drugs) agents are given, the better the result. Then there is less likelihood that there will be complications, and less serum or drug will be required. Whether or not a physician should use serum or one of the chemotherapeutic agents is a matter requiring professional judgment, obtained by experience and reading. The selection of the appropriate remedy is the doctor's responsibility. In patients who have reacted badly to the drugs, or in those cases in *(Continued on page 64)*

Why Other People Smell

Perhaps the parables of modern advertising DO apply to you; those parables told in terms of social fear: the loss of love and popularity

By HOWARD W. HAGGARD

Unpleasant breath, with rare exceptions, originates in the mouth where organic matter putrefies from bacterial action.

THE NORMAL, natural human body, clad, but unwashed, develops a distinctive odor. But the nose above that body is blissfully unconscious of the aroma. To his own good fortune, but to the misfortune of his associates, man cannot smell the full aroma of his own breath, nor is he keenly conscious of the odor of his own feet. This is an accommodating but treacherous characteristic of the sense of smell. When persistently exposed to an odor it accommodates itself. The nose, still keen for all other odors, lacks sensitivity to this one until it has been freed for a time and comes back to its task refreshed. The odors it lives with, the nose ignores.

This adaptation is a source of self-protection in eating onions when others have. The unwashed boy, the sweaty-footed youth, the garlic-saturated man in the theater, is each unconscious of his own aroma. The only protection for others, who smell as well as see, is to cultivate these odors and with them the oblivion of adaptation, or move. We do not like persons who have an odor different from our own.

The treachery of adaptation is that it leaves us uncertain about ourselves. Do the para-

bles of modern advertising apply to us; those parables told in terms of social fear—the loss of love, jobs and popularity? It may be you, it may be I; our noses and our best friends won't tell us.

Our noses have always been unreliable, but it is only passing social convention which silences our friends. Our hardy ancestors of the Georgian period had no reticence on the subject. When an odor finally beat down their own adaptation and they became conscious of it, they commented simply and briefly on the "natural gamy flavor of the human body." In a day when dental decay and pyorrhea were common ailments and the toothbrush a curiosity, these forefathers of ours, in their quaint but direct language, referred, not to the halitosis of an associate—they simply said he "stank."

It was the Victorian age that pushed human odors from conversation if not from thought. It was vulgar to mention them; one must pretend they did not exist, just as stomachs and legs did not exist.

It is modern advertising which has restored the personal odors to verbal existence. They have become "big business" for the manufacturers of mouthwashes, toothbrushes and toothpastes, medicated soaps, bath salts, deodorizing ointments, lotions, and powders and for the laundry. Personal odors rank high in the three great appeals of advertising—sex, health and social. Even advertising cannot, for our nice ears, use the hearty language of the Georgian days. But every copywriter knows that social conventions apply to words and not to thoughts. Give us a euphemism for a vulgar word and our conversation flows unstinted on the once forbidden subject. Thus the stinking breath of yesterday, by the golden legerdemain of advertising, becomes the million dollar halitosis of today. The medical term for this condition is *fetor oris,* bad smelling mouth. For smelly sweat, advertising genius passed by the medical bromidrosis in favor of the initialed euphemism of B.O.

When we seek for the cause of human odors, we find the highly important and highly encourging fact that, with rare exceptions, they are not inherent to the body but are acquired. They are not produced by some complex chemistry deep in the flesh and discharged upon the surface; they do not come from bad, smelly blood. They are formed on the surface. The sweat and grease, as they come from the glands of the skin, have, again with rare exceptions, little odor. But they acquire one when they stay on the surface, turn rancid and putrefy from bacterial action. The same is true of the breath. As it comes from the lungs it is, again with rare exceptions, pure and sweet, with only a "warm" and not unpleasant odor. It acquires its odor from the mouth. Here, retained food, secretions, diseased tissue and exudates, putrefy from bacterial action and give their odor to the breath.

Of the exceptions, the greatest is alcohol. The odor of the "boozy" breath comes from the lungs—actually from the blood—and not from the mouth. For about fifteen minutes after a drink, the mouth stays moist and smelly of the beverage. Further odor comes only when the alcohol is absorbed from the stomach and intestines into the blood. With each round of the circulation some of the alcohol is evaporated into the air of the lungs and taints it. Even after one drink there is enough alcohol in the blood and breath so that for several hours it can be measured by the chemical tests which are now used in the diagnosis of drunkenness.

Any readily volatile chemical, taken in the quantities in which alcohol is drunk, will give its odor to the breath. But it is rare indeed that we indulge liberally in shoe polish, lacquer or fly spray; if we did, our breath, if it continued, would smell of them. Other than alcohol, the only volatile, odoriferous substances we eat or drink are ingredients of food; the natural oils of onion, garlic and spices. They may smell stronger than alcohol, but they are present in food in only minute quantities. Unless we gorge ourselves with them day after day, enough is rarely accumulated in the blood to taint the air in the lungs. The odor that appears on the breath comes from particles retained in the mouth. It is the same as with chewing gum; the flavor smells strongly while we chew it, but soon disappears if we happen to swallow the gum.

There are two other conditions in which the air of the lungs may be tainted but both, fortunately, are rare. In severe diabetes, fats may be incompletely burned in the body, and the volatile acetone and kindred chemical substances which are formed may appear in the breath. Again, the air may be tainted by an abscess in the lungs. But these are serious conditions in which the odor on the breath is an insignificant feature.

For odors that come from the lungs, there is no first aid measure. At a very poor best

they can only be masked, just as a liberal sprinkling of perfume may temporarily divert attention from the odor of rancid sweat. If a perfume—cloves, cinnamon, sen sen, spearmint, or whatever we prefer—is put on the breath and if it is stronger than that of the alcohol, perhaps the alcohol will go unnoticed.

Barring the lung odors, rare except for alcohol, and barring, too, equally rare putrefying diseases of the throat or nose, the overwhelming majority of breath odors come from the mouth, tongue, teeth, gums and tonsils. They are all local. There is, emphatically, one place from which they do not come, and that is the stomach. The stomach, except in swallowing or belching, is tightly closed off from the passage leading to the throat. Only in belching is there a blast of collected air from this organ. The momentary odor is usually not fetid; it is only faintly reminiscent of something we enjoyed before the indigestion started—radishes, cucumbers, peanuts. Nine times out of ten, perhaps ninety-nine times out of a hundred, barring alcohol, odors of the breath are local, that is, reachable and remediable, although your doctor and your dentist may need to do some of the reaching.

The simplest of mouth odors are those from particles of onion and garlic retained between the teeth, in the coarse openings on the back of the tongue, and under bridgework. The toothbrush and dental floss help, but rarely do they do a complete job. It can only be finished chemically, and the best chemical cleaners for the purpose are the hypochlorites, like Dakin's solution, or the chloramine compounds. These chemicals, when used as mouthwashes, actually destroy the organic, odoriferous oils of the vegetables. They work in the same way as their cruder counterpart, chloride of lime, an effective household deoderant. This chemical, along with the other hypochlorites, is the best deodorant for the odor imparted by a skunk, which, incidentally, is also on the surface.

Onions and garlic carry their own odors; they immediately taint the breath of every one who eats them. Many other foods, especially meat, when retained between the teeth and about the mouth, do not give off an odor at once. Instead, they taint the breath only after they have putrefied. And again, unlike onions, such foods may not taint the breath even if retained for a long time. How quickly they taint the breath depends upon the speed and nature of the putrefaction. And this in turn depends upon the sorts of bacteria present and other conditions of which little is known. In the mouths of some fortunate individuals little, if any, odor develops from retained particles; in the mouths of others, a particularly foul-smelling putrefaction promptly begins.

Overcoming mouth odors due to retained and putrefied food is no simple matter. There is at present no certain measure for completely ridding the mouth of the more active putrefying bacteria, or replacing them with less offensive ones. But much can be done to reduce the material upon which the bacteria act. The first step is to the dentist. He will fill, or extract, decayed teeth that not only hold food, but may also have an odor of their own; he will close pockets in the gums that collect food. That is the start; next comes the use of toothbrush, dental floss, and, if you like its taste and smell, a mouthwash after every meal. If the dental toilet cannot be made conveniently at noon, meat and other soft foods may be pushed from between the teeth by eating an apple or other firm-fleshed fruit. The apple pulp lodges between the teeth, but it does not putrefy as readily, nor as odoriferously, as does meat.

The tongue, as well as the teeth, may collect and hold food and secretions until they putrefy. This is especially true if the tongue is inflamed or furred during constipation, menstruation, a hangover, a head cold, or from mouth breathing. The fine particles of salivary sediment and food are caught in the "fur" and find their way into the crypts on the base of the tongue. They putrefy and smell. The doctors of a century ago, when furred tongues were more common than they are now, recommended a silver tongue scraper, a miniature hoe, for the toilet of the tongue. A soft toothbrush, gently applied and applied far back, serves the same purpose, a glass of fruit juice is helpful, and you can finish off with a mouthwash of any flavor that suits your esthetic senses.

Next, less common but far more potent, is the putrefaction of the mouth tissue itself in pyorrhea, and occasionally in trench mouth. In these diseases there are infected and odorous sores in the mouth. During diseases such as measles and tonsillitis, the breath may be badly tainted. And if the tonsillitis becomes chronic, the taint may persist. This is a common cause of foul breath in children. In adults, chronic infec- *(Continued on page 60)*

Fallacies, Fantasies and Facts

By LEON FELDERMAN

THE INABILITY of primitive man to understand the cause and effect of bodily disorders kept him in a state of constant bewilderment. His primordial instinct pointed to a supernatural power beyond his control, which seemingly ruled all his misfortunes. Thus, he erected a wall of misunderstanding between the jungle environment and himself. As the mysteries deepened, the sorcerer, the medicine man, and the magi methodically seized the opportunity to intrench themselves with their preachments of the bogey and its coterie of vengeful gods. Thus the harboring of superstitions and faith healing thoughts continued unabated, till the present time when pseudo science and its related quackeries made inroads into our accepted standards of healing. Even to this day of medical advancement the ancestral cloak of ignorance has not been completely shed. We still meet persons who carry amulets and talismans as shock absorbers against bodily derangements. There are still persons who believe in miracles and in the power of incantations.

Though we live in a radio age, there are those who retain views of medicine which savor of the covered wagon days. Such prevalent beliefs that ear wax is associated with unclean personal habits; that a discharging ear, if left to its fate, will improve of its own accord; that the hotter the room in the winter months, the less apt one is to contract colds; that the propitious time for the performance of tonsil surgery is in the summer months are but a few of the foibles which our civilization embraces. These ideas have been so carefully woven into the texture of our existence that they are part of our rationalization.

For example, there is the case of the housewife who told the physician of "buzzing sounds" in her head, followed by sudden deafness. In the course of the examination, the indirect light revealed a solid black area which was correctly diagnosed as wax in the ears. The patient, in the presence of her companion was advised of these findings, the wax removed and the case unceremoniously dismissed. A few months later, the patient returned with two complaints: one was the recurrence of her old condition, and the other was aimed at the doctor whom she upbraided for his thoughtless disclosure of the "dirt" in her ear canals. Her tale of woe then turned into a question. The patient could not understand how, in spite of washing her ears daily, the wax reformed, causing her embarrassment and mental anguish. The patient was then told that this wax formation in the ears casts no reflec-

tion on personal hygiene. However, it was explained that when the wax glands in the ear canals become overactive, an accumulation of wax may result. Those who are engaged in dust-laden pursuits may show the effect of their occupation by the presence of wax in the ears. This episode taught the outpatient staff that more than diagnosis and treatment were required: Patients should be enlightened when the possibility of misunderstanding may exist.

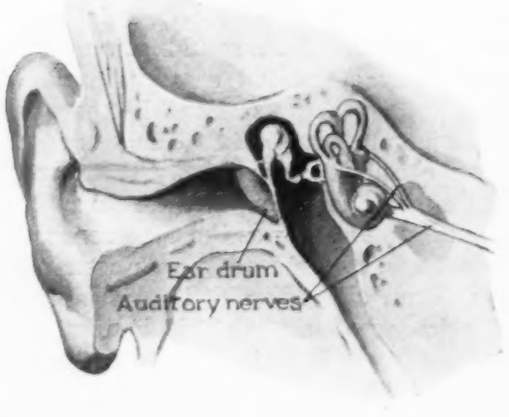
Another fallacy, somewhat similar, is the policy of non-active treatment for a "running" ear. The family doctor is familiar with that ear condition which constantly keeps draining pus over a period of four or six weeks, or longer, eventually leading to mastoid surgery. Ordinarily, a suppurative (discharging) ear with a certain amount of loss of hearing can be conserved when given immediate care. The aim of every physician when assuming charge of a patient with an ear disorder of this kind is to prevent it from reaching a chronic state. The constant outpouring of pus is not only a drain to the human economy, but the longer it is neglected, the more difficult it becomes for the patient to recapture his lost hearing. Some patients actually believe that the acuity of hearing is sharper when the ear is discharging pus. Paradoxically, pus in the liquid state may be a good sound conductor, but the presence of the yellowish green fluid in the ear canal and the macerating effect it has on its adjacent structures should not be overlooked. Therefore, the good hearing which the patient reports, at first, may be more apparent than real. This fallacy must have originated years ago, when mastoid surgery was in its early stages of development. Then the physician had no alternative other than to adopt a policy of masterly inactivity, and show his concern only when the ear suddenly ceased to drain. Under such conditions the clinical picture of the patient also changes: sharp pain, chills and rise of temperature are but a few of the symptoms pointing to mastoid surgery. Here sophistry was founded on a fallacy which did not differentiate between a gradual and sudden cessation of pus drainage. A "running" ear is always a potential risk.

Charles Darwin was the first scientist to describe the tiny projection located in the upper first curvature of the shell-like appendage (the outer portion of the ear) which anatomists have since named the darwinian tubercle. Cesare Lombroso, the criminologist, pointed out that persons with criminal tendencies have well developed ear tubercles. The idea gained support when business integrity was judged by the presence or absence of a raised ear tubercle. Fortunately, this embarrassing analogy was found misleading and has long been discarded by the present day scientists.

Patients often ask their physician whether the loss of one or both ear drums will be followed by complete loss of hearing. This is usually answered in the negative because this drum is not a vital part of the hearing mechanism, *per se*.

The drum head (tympanic membrane) of the ear is a delicate semi-opaque disc, either oval or elliptic in shape. When viewed from the outer end of the ear canal, the membrane presents a funnel shaped appearance; the concave [funnel] surface resembling a trap-door, situated at an angle of 55 degrees, midway between the first part (external) and the second part (middle) of the ear canal. Although, structurally, the drum is thin, it is composed of three layers. These layers measure less than $\frac{1}{100}$ of an inch in thickness. One of the main functions of the tympanic (drum) membrane is to carry the air waves from the external world to the hammer handle, located in the drum membrane. This bone, in turn, projects the sound waves to the other two small ear bones of the middle ear till the sound waves are conveyed to the nerve of hearing.

AUDITORY SYSTEM



Practically every motion produces waves in the air, and these waves are translated by the nervous mechanism into hearing.

There the brain finally interprets the message. The outer layer of the drum membrane is a modification of the outer skin canal (the external part), while the middle portion has circular and elastic fibers which accounts for the elasticity of the ear drum. The innermost layer of the drum membrane is continuous with the inner layer of middle ear canal.

Moreover, the trap-door of the drum membrane has a protective role to perform. What happens if, through disease, the drum membrane is destroyed? The various particles of dirt and bacteria, which abound in the first part of the canal, may enter the middle ear canal, depending upon the posture and activity of the person. The entire drum head may be removed from an animal, experimentally, and the acuity of hearing will remain unaltered, thus showing that the ear drums have no direct bearing on the nerve of hearing.

But what happens when the dirt and bacteria accumulate and enter into the inner ear is another story. The drum membrane, in addition to its protective role acts as a buffer when loud noises or impact of blows fall directly on the ear. Still the notion persists that absence of ear drums mean total loss of the specialized sense of hearing. In otosclerosis, a disease in which the inner ear structures undergo spongification with gradually diminished hearing, the examiner is amazed to find almost normal looking drums, seldom revealing that a state of deafness exists. The external appearance of the drums never hints of the devastating changes in the hearing mechanism. However, the ear drums are not without physiologic function, for persons who possess drum membranes fare better than those who have fringes of drum heads as mute evidence of protractedly discharging ears.

Physicians often meet patients who dismiss lightly a burning or buzzing sensation in their ears; they believe they are receiving favorable comments from a friend. The curious phenomenon is ascribed to the force of telepathy, relayed through the extra sensory perception system. One patient said: "Doctor, those roaring sounds make me spend sleepless nights. I am tired of being mentioned, whether it is good, bad, or indifferent. Please do something and give me relief."

Ringing noises in the ears may be the first and only subjective signal of a middle or inner ear impairment. Those who heed the warning and resort to early treatment may find the only hope to conserve their hearing.

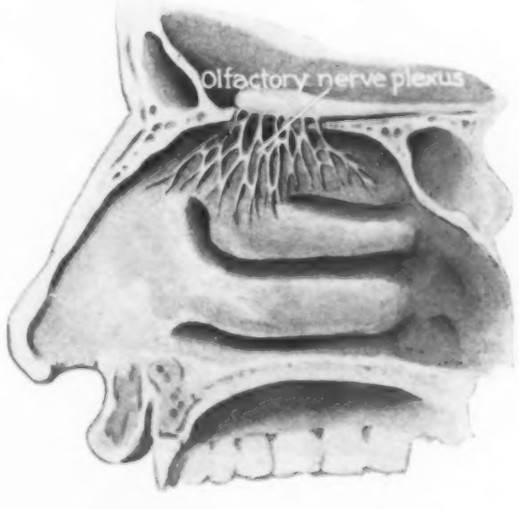
Disorders of the nose, too, have their share of illusions which have become a part of our civilization. For example, to the uninitiated, itching of the nose following a meal may mean a visit from a friend. It would be indeed laughable, were it not for the fact that those who are afflicted with this affection are keen sufferers. However, to the patient, the itching nose accompanied by paroxysmal fits of sneezing presents a vexatious problem. When these symptoms follow the ingestion of a meal, it usually points to allergy (sensitivity) of food. To a typical hay fever patient these superstitious notions have no appeal.

Some superstitions have gained universal favor and have become part of our social ethics. The origin of the salutation "God bless you!" and similar forms follow:

"From the day on which the heavens and the earth were created, whenever a sick person on the road or in the market place would sneeze, his soul would leave him via his nostrils, until our Father Jacob came along and pleaded for mercy regarding this matter. He said to God: 'Master of the entire universe, do not take my life from me until I charge my sons and servants.' This was granted to him. . . ."

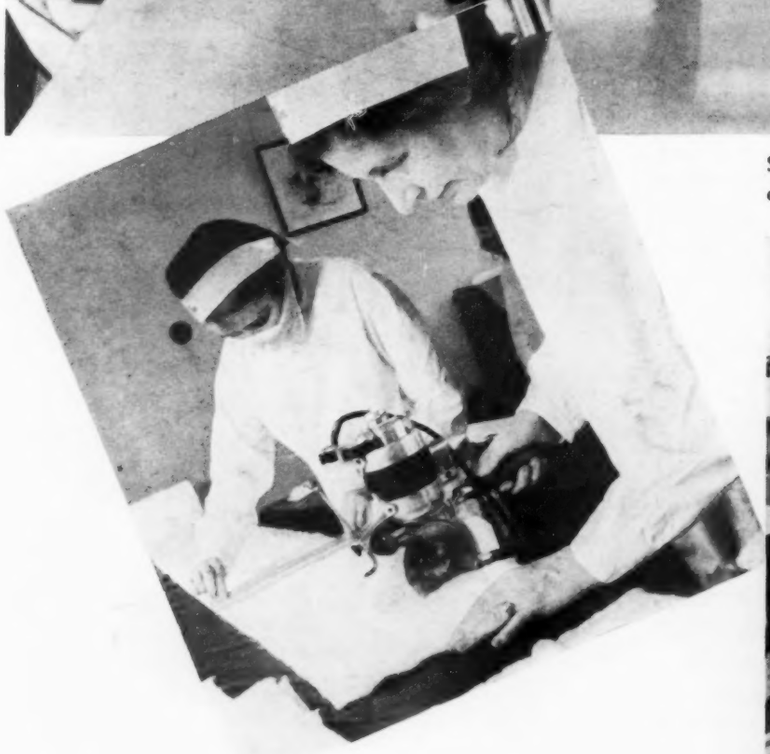
Hence, when a person sneezes, he must say, "For life!" because sneezing, since Jacob's prayer, has ceased to be fatal and the good wisher is saying that *(Continued on page 72)*

OLFACTORY SYSTEM



The sense of smell as a protective device has become less vital to the human being. It is now used more in conjunction with taste.

Sponges are not difficult to make. They are used for drainage and cleaning, may be unfolded for other uses.



ABOVE: Electrical, razor-edged cutting machines hasten production.

RIGHT: All surgical dressings are packed in brown paper bags, then placed in wooden boxes lined with waterproof paper for shipment to New York City, where they are placed aboard European-bound vessels.

Hand Made Mercy

GEORGE ADAMS *explains the force which prompts thousands of women, young and old, educated and illiterate, rich and poor, to forsake hours of leisure, friends, social engagements, cultural pursuits, even their household duties, to spend many unselfish hours working for suffering humanity*

THERE IS SOMETHING about the cutting and rolling of surgical dressings which appeals to women in every walk of life. This is not hearsay; it is a fact attested to by Red Cross production chairmen throughout the United States. The present war in Europe has been responsible for more women volunteering to cut and roll bandages for the American Red Cross than have volunteered to serve the Red Cross over a period of years in all other capacities combined. The total number of such volunteers—those preferring surgical dressing work to other kinds of volunteer service—is not accurately ascertainable, but very likely it exceeds 300,000. And more volunteers for this type of service are presenting themselves at Red Cross chapter houses every day.

What is the urge which prompts women young and old, rich and poor, educated and illiterate to give up hours of leisure, friends, social engagements, cultural pursuits, even household duties, in order to perform this unselfish labor for suffering humanity? It is not excitement. For what excitement could there possibly be in folding a gauze roll 36 inches wide and 3 yards long in half lengthwise, turning it under 1 inch along an edge, folding it again and then again and then rolling

At the war's beginning, American Red Cross surgical and medical supplies were shipped abroad by Clipper planes.

it smoothly and tightly? Could these women be seeking good cheer? Hardly, for in most Red Cross production rooms a business like attitude prevails and signs along the walls caution against loud conversation, smoking and such irrelevant activities. Have these women no other place to go where they can enjoy the company of their kind? Again the answer is negative, for many women's clubs, social groups and recreational organizations possessing adequate quarters of their own in which to meet, convene at the Red Cross chapter house and dedicate their weekly or monthly get-togethers to rolling surgical dressings instead of to having fun.

What is it then that draws so many of them irresistibly into this common impersonal effort directed toward relieving the misery caused by war?

It is, you will be told by any Red Cross chapter production chairman, wise in the ways of volunteer workers, some deep rooted elemental desire that lies in the heart of every woman to bind the wounds and heal the sicknesses of all unfortunate victims. War, the production chairman will remind you, with its debacle of gore, its unleashed pestilences, its famine and its filth, arouses this instinct in the feminine breast as nothing else can.

If you don't believe her, follow her into the Red Cross production room—any production room in any Red Cross chapter where dressings are made—and there you will see for yourself. You will see women—5 or 6 of them, a score, perhaps 40 or 50—each wearing her volunteer production worker's uniform consisting of a blue and white smock with a red cross in front and a blue and white cap similarly adorned with the insignia of mercy. These uniforms, you will learn, are to protect the surgical dressings from contact with the garments of the workers, and must be worn and kept scrupulously clean at all times.

But if the tense, concentrated demeanor of volunteers is not sufficient proof of their sincerity, surely their diligence is. Seated or standing at long tables piled high with cotton and gauze, they work silently, their eyes lowered to the tasks in front of them, their fingers making swift, deft movements as they fold the dressings into shape. Workers at each table are assigned a separate job; here one group is twisting gauze fluffs; there another cuts T binders and still a third makes "sponge" 4 by 4s. Everywhere is bustle and activity and a deadly earnestness, the almost painful determination to do as much good as possible, to accomplish all that can be accomplished in the space of a single morning or afternoon.

Making surgical dressings is not difficult work, but there is a lot to it. The Red Cross produces 8 essential dressings, the names and purposes of which are as follows: 4 inch square sponge, a dressing of gauze used for cleaning wounds and drainage which, by unfolding, can be made into a dressing 4 inches by 8 inches or 4 inches by 16 inches; the small sponge 2 inches by 1½ inches, a similar dressing used for cleaning wounds, applying iodine, drainage, etc.; the gauze fluff, a large, soft, fluffy dressing particularly useful for drainage; the gauze roll, 3 yards by 4½ inches, an arm, leg, shoulder, head or hip dressing; the cotton pad, 12 inches by 6 inches, employed as an outside dressing and for absorbing drainage; and the square 12 inch cotton pad, used in the same manner.

In addition to these essential dressings, the Red Cross has a list of secondary dressings which also may be prepared by volunteers. This list includes, among other items, gauze packer strips, slings, draping towels, draping sheets with openings, and plain draping sheets. On the secondary list, likewise, are the gauze roll, 3 yards by 9 inches, for packing and draining; the T binder for retaining dressings on the perineum, rectum and scrotum, the scultetus binder for holding large abdominal dressings in place, and an abdominal pack, with tape, 18 inches square. Of these secondary dressings, the gauze roll 3 yards by 9 inches and the T binder are the most important. The Red Cross also has cut and rolled bandages according to French and British specifications.

Since the current war began in Europe in September, 1939, volunteer workers for the Red Cross had produced, as of August 31, 1940, more than 17 million surgical dressings. Five million of these dressings already have been shipped to England, Finland, France and Poland. Red Cross chapters engaged in surgical production work number 431. Most of the activity in this line of volunteer endeavor is restricted to large metropolitan chapters where proper conditions of sanitation and supervision over the work can be maintained.

It is interesting to note in this connection, however, that while most Red Cross surgical dressings are rolled in big city chapters, the volunteers who roll them are not all city residents. Many country women commute to the city one or more times a week *(Continued on page 43)*

Pueblo Builds a Hospital

***RALPH C. TAYLOR** describes a unique hospitalization project which has done much to lessen institutional atmosphere and reduce costly expenses*

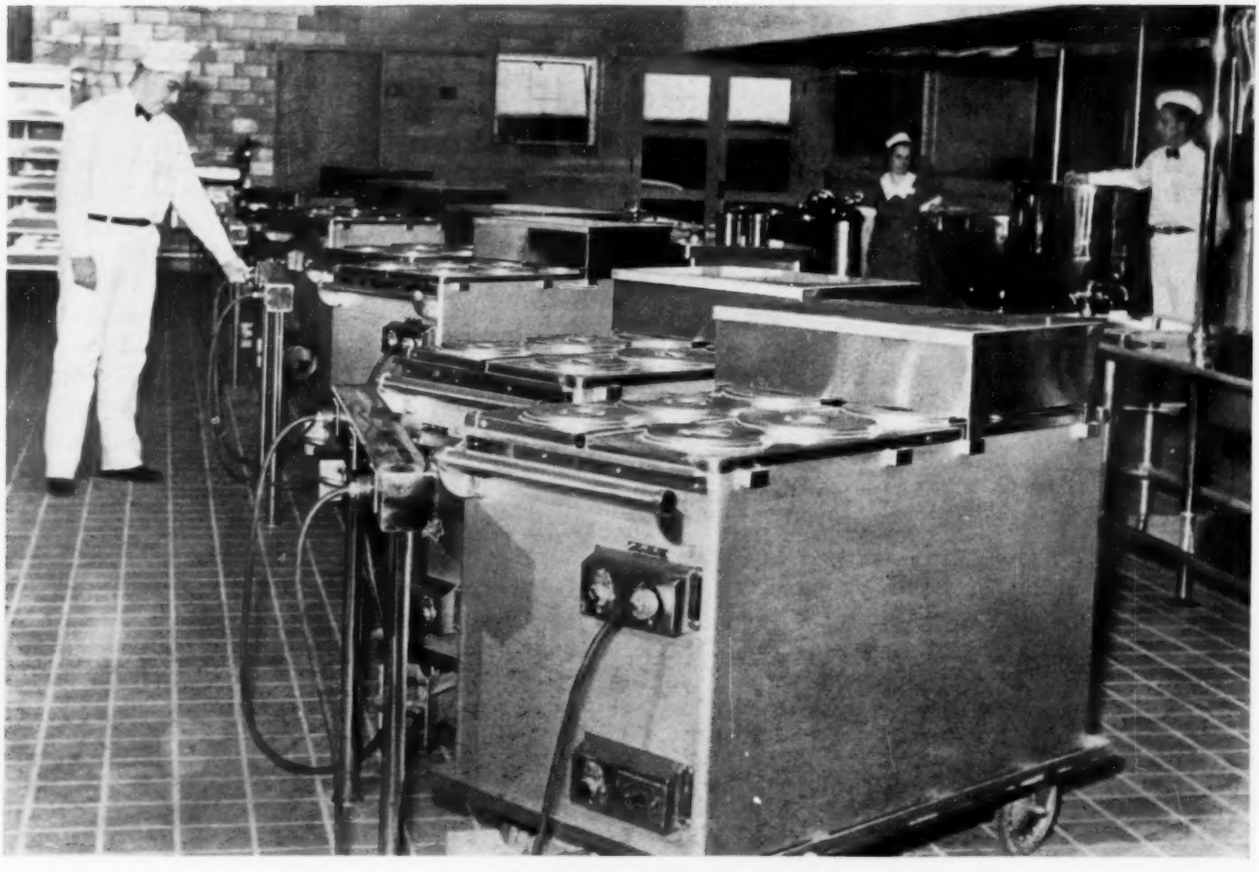
OVER two decades ago the Colorado State Legislature approved the cottage hospitalization plan and passed a law providing that not more than 100 mental patients can be housed in one building. With the rapid increase in insanity in Colorado, as well as throughout the rest of the nation, there has been much congestion at the Colorado institution—and until the new units were finished, there were almost twice as many patients in dormitories as intended.

The law of 100 persons for each building, however, gave officials a problem in considering economical construction. In the first group

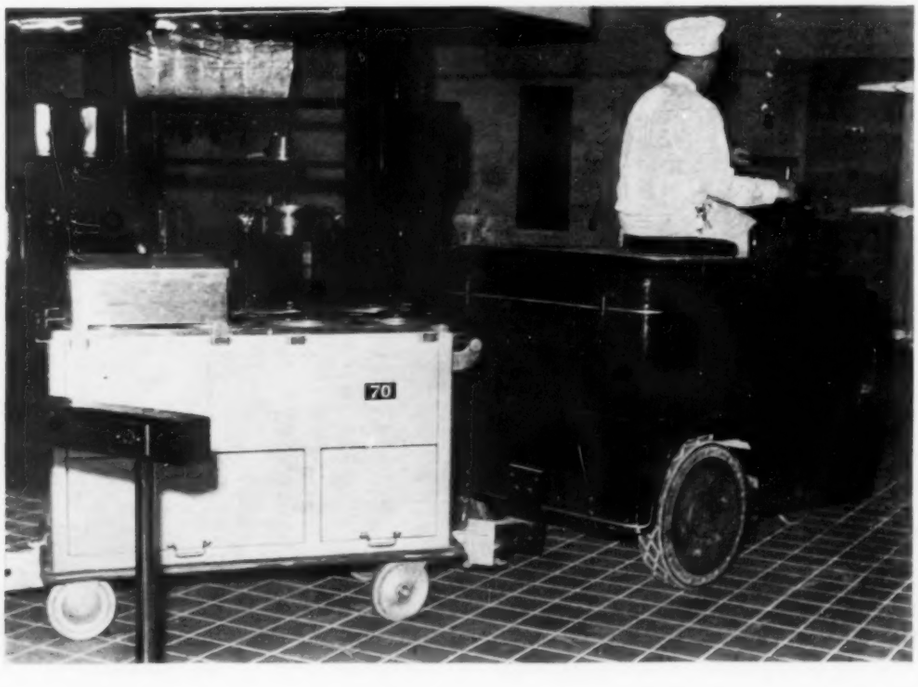
Aerial view, showing V-type construction of buildings, with centralized master kitchen.

Pueblo Star—Journal

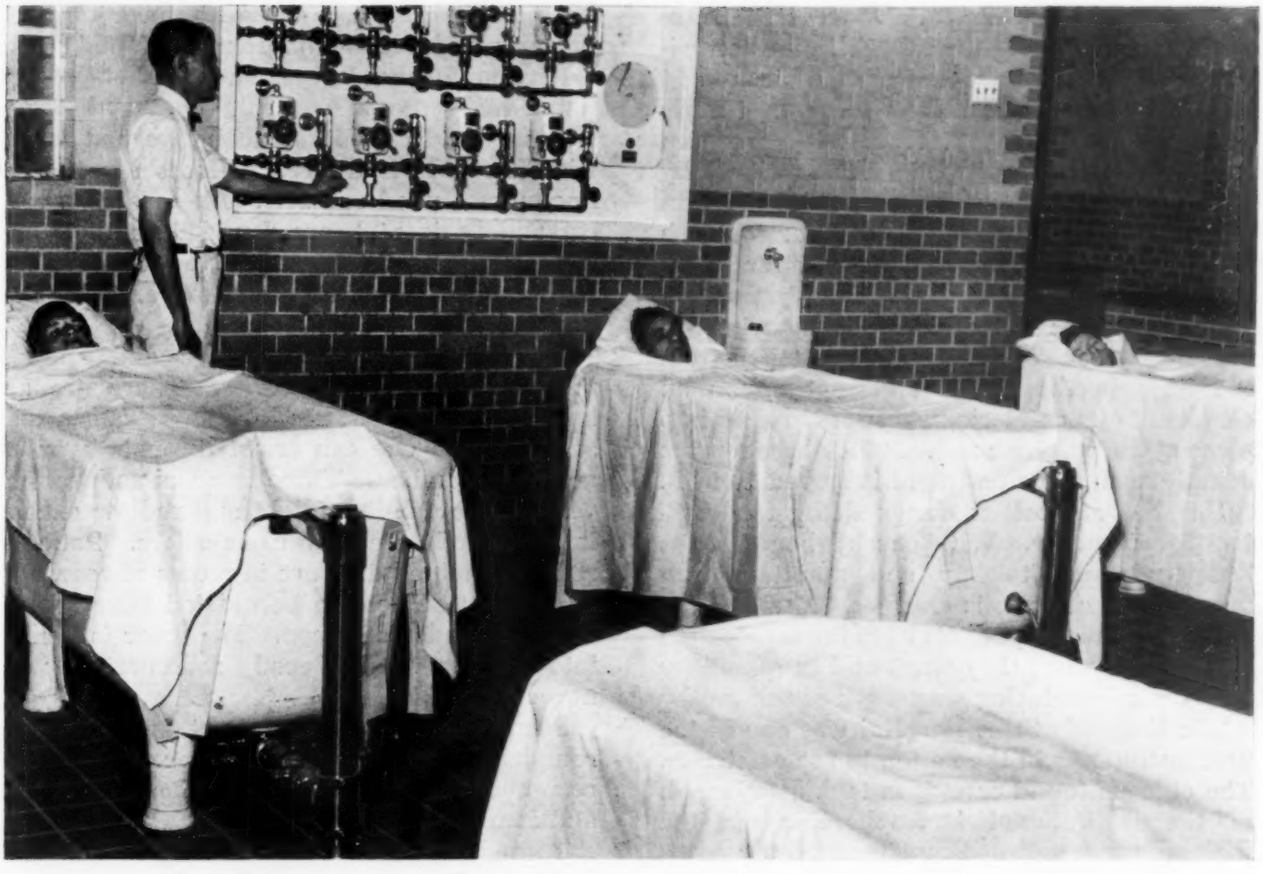
STEAM TABLES for ECONOMY



All meals are prepared in the central kitchen which has facilities for feeding 2,200 patients at a time.



A system of connecting tunnels makes it possible to distribute the food to the unit cafeterias in specially designed food cars with hot and cold compartments.



Hydrotherapy treatments may be either sedative or stimulative. Shown here is a method of the sedative technic: The patient is wrapped in a sheet and suspended on a canvas hammock in the tub, through which water is circulated at 96 F., the approximate skin temperature. Baths usually last from two to six hours, but patients must be given an oil rub at least every four hours.

of buildings the cottages were two story units, connected by porches and tunnels. There are four such units for men and as many for women, with a central kitchen and cafeteria for each group.

In the newly opened group the dormitories were built in the form of huge Vs, each leg two stories high and housing 100 patients. The legs are connected by cafeterias and sitting rooms, making two of each serve instead of the four which would be necessary if the buildings were not so arranged.

In the center of a cluster of new buildings is a central kitchen with facilities for preparing

meals for 2,200 patients at a time. Food from the kitchen is sent to the cafeterias in the various buildings in large food cars that are pulled through the connecting tunnels by an electric tractor. The stainless steel train is as modern as those of today's railroads. It was especially designed by Mrs. Cora Kusner, chief dietitian at the hospital. There is a food car for each cafeteria and there is a cafeteria for every 100 patients.

Each car has hot and cold compartments, electrically controlled. The car is taken from the train in the tunnel and sent up on an elevator to its cafeteria, where it is rolled into place at the cafeteria rail. It then becomes the actual steam table and food is served from it.

Hospital authorities designed the food system for economy. With one kitchen there is less equipment to buy and maintain, and preparation of food is cheaper. Through the cafeteria plan the patients have the satisfaction of selecting what they want and in quantities they desire—reducing waste.

The Colorado State Hospital was one of the first institutions in the nation to use cafeterias. The officials found cafeterias took away much of the institutional atmosphere, made the patients more satisfied and pared labor costs. Patients do not have to eat what is put before them, but can select available foods with the same freedom as a customer in a restaurant.

Dishes are not handled on the food train. Each cafeteria has its own tableware, dish washing machine, coffee urn, griddle, toaster and refrigerator. Large storage rooms, refrigerated rooms for meats, fruits, vegetables and dairy products are in the central kitchen.

Tunnels were not an added expense, because all of the 50 or more structures at the hospital are connected by tunnels 6 feet wide and 9 feet high, which carry water, gas, electric, heat and other service lines. They also are used to move supplies and patients in bad weather. The buildings appear to be expensive construction for a tax-supported institution, but while the original cost may be a bit higher than ordinary hospital buildings, there will be practically no maintenance in future years. Specially glazed tile is used for interior walls instead of plastering. A bricklayer and his helper can erect brick exterior and tile interior walls, but with plaster, the lather and plasterer and their helpers are utilized, stepping up labor expense.

The tile is too hard to be broken and that is important in a mental hospital where patients dig plaster off the walls with hard objects. Burlap glued over the plaster was found to be better than exposed walls, but the tile has been found to be the perfect solution.

Rooms and corridors can be washed down with fire hose if desired. Floors are tile or linoleum-covered concrete. All corners, vertical and horizontal, are rounded so that dirt cannot collect. Consequently, the cost of keeping this type of building sanitary and clean is unusually low.

The buildings are attractive and appear more as college dormitories. There are no barred windows. Metal window frames are such that no one can crawl through, even if a pane is broken. There is an abundance of windows to admit sunlight and radiate cheer; interior walls are in various colors. Patients requiring stimulation are in rooms of rose, red and cream. Those to be quieted have rooms done in shades of green. The color is baked into the tile, so that costly redecoration will never be required.

Structures are set far apart and are surrounded by spacious lawns, flower gardens and recreation facilities for the further enjoyment and comfort of patients.

There will be no overcrowding in the new cottages. The rooms are of ample proportions for one bed, but they have been built purposely so that they are too small for two beds.

Work will start soon on two more cottages. Buildings just finished include eight dormitories, detention building, central kitchen, hydrotherapy rooms, isolation unit, central storehouse, bakery, butcher shop, sewing room and dining hall for employees with a dormitory for patients who work at the farm.

At present there are facilities for 4,000 patients and 1,000 employees. Actually there are about 4,000 patients in the institution, but those on parole bring the number up to about 4,600.

Governor Ralph L. Carr has approved the proposal to provide outside housing for 300 of the employees and eventually most of them will be quartered outside the institution. This will alleviate the need for more buildings to care for the growing number of employees. It also will make employees more settled, interested in community life and in turn better employees.

That the institution is doing a good job is seen from the number of rehabilitated cases—62 per cent of admissions are able to return to their places in society.

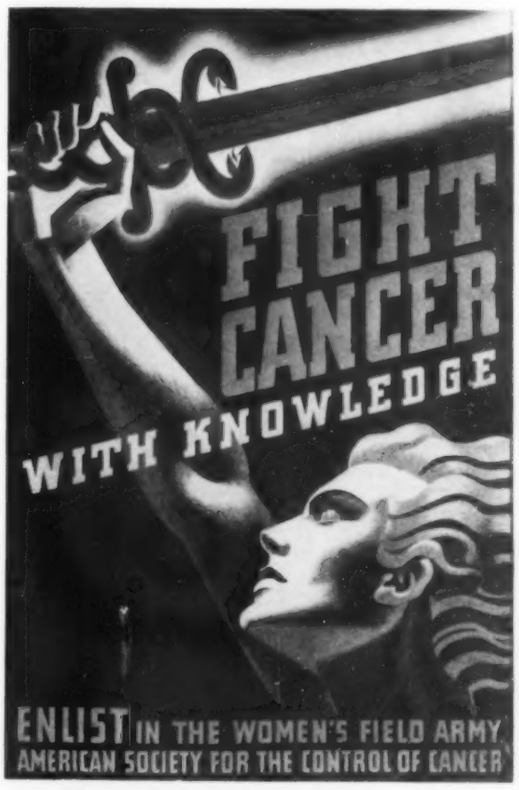
CANCER CONTEST WINNERS

WHILE health education in general presents many controversial problems, cancer education in particular fairly bristles with difficulties. Here is a subject loaded with emotional dynamite. Around cancer is gathered a bewildering mixture of shame, superstition, guilt and fear. In no other disease is the role and the word of the physician of more vital importance. And somewhat paradoxically, in no disease is it more essential that the layman learn certain facts and be prepared to act on them.

The role of the American Society for the Control of Cancer, Inc., is to save lives through education. In 1936 the Directors of the Society decided that an aggressive and emotionally appealing program of education for the general public was essential. Its Women's Field Army was launched through the cooperation of a handful of club women and physicians. Today the Field Army has effective divisions in 46 states; there are more than 34,000 women officers whose work is supervised by several thousand physicians; in April 1940, more than 160,000 women enlisted in the movement. Through millions of leaflets, thousands of public meetings, many columns of newspaper space and hours of radio time, information on cancer is gradually being spread throughout the country.

An encouraging beginning has been made. However, the road of education is by no means cleared. With each leaflet, radio program, or other item, questions must be asked: Will this catch the interest of the public? Will it reassure, rather than frighten? Is it certain not to precipitate morbid, neurotic concern with disease? Will it encourage the reasonable optimism, justified by the results in the treatment of early cancer in many sites, without obscuring the essential seriousness of the cancer problem? Will it tend to replace fear and ignorance with an attitude of alertness and courageous intelligence? Will it build confidence in the family physician? These questions could be extended, but they suggest the difficulties at hand. If every piece of educational material issued by the American Society could pass the test of these queries, cancer control workers would be happy indeed.

One of the obvious weaknesses in educational material has been in the Women's Field Army posters. They have not been useless but they have lacked distinction. Criticism has been severe, especially from those volunteers who were expected to use them. Colors, symbols, designs, lettering—all were



Henry Koerner, 24 year old Austrian refugee, won the $1,000 first prize with this poster.

the targets of letters from the field. Other health agencies may possibly be faced with a similar problem. In any event, it will be of interest to describe in some detail the steps taken to secure effective posters for the Women's Field Army.

Mrs. Francis J. Rigney, recently appointed consultant director of public relations for the American Society for the Control of Cancer and for many years the director of public relations for the New York City Cancer Committee, suggested and planned the poster competition.

The prizes awarded were large, totalling $1,875. For a health organization this is a considerable sum of money, but the value of generous prizes was proved by the quantity and quality of posters received. A Jury of Award was carefully selected to satisfy artists of all schools, and the medical directors of the cancer control movement. Those serving included Hobart Nichols, N.A., President of the National Academy of Design, who acted as chairman; Frank E. Adair, M.D., Chairman of the Executive Committee of the American Society for the Control of Cancer, Inc.; John Taylor Arms, N.A., President of the Society of American Etchers;William H. Baldwin, public relations counsel; Lester Beall, illustrator; Edmund Greacen, N.A., President of the Grand Central School of Art; John C. A. Gerster, M.D., Chairman of the New York City Cancer Committee; Ben Nash, industrial designer; Francis J. Rigney, Art Editor of Boy's Life; Rodney Wilcox Jones, President of the National Alliance of Art and Industry, Inc., and C. C. Little, Sc.D., Managing Director of the American Society for the Control of Cancer, Inc.

The contest itself was managed by the National Alliance of Art and Industry, Inc., which has had wide experience in such matters. To make certain that the competition was called to the attention of all artists, publicity and letters were sent in April and again in September to all the art publications, the art schools, the advertising agencies, and leading artists. Special stories of interest to the public were released to newspapers, to press services, to advertising and health magazines, to columnists and to broadcasters. Excellent publicity resulted and hundreds of letters about the contest were received. In all, 10,000 application blanks were mailed, most of them in response to special inquiries.

When the judges arrived one October evening at the National Arts Club to select the winners they were faced with the staggering task of viewing more than 800 posters, submitted from 45 states, the District of Columbia, Hawaii, and Canada. Each poster was examined and it was agreed by the Jury that 300 were excellent. After many hours, the choice was narrowed to 20 designs. Several ballots were taken and each judge was forthright and aggressive in defense of his choice.

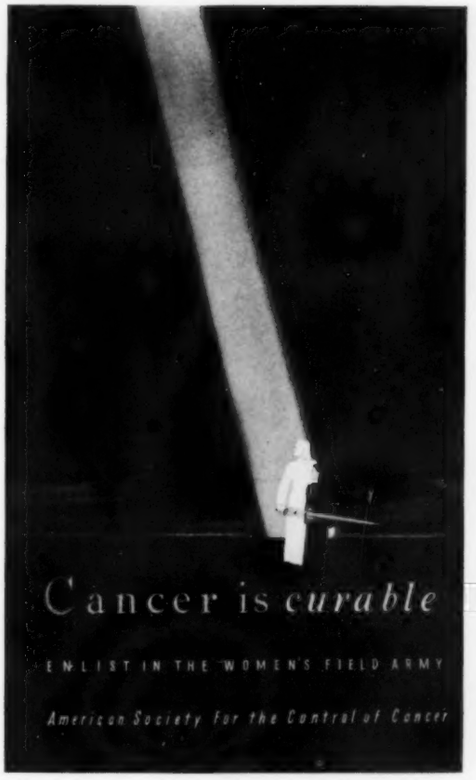
Finally, the Jury was torn between two posters that differed radically in spirit and in approach. One was a straightforward drawing in shades of blue and bronze, centering on the upturned head and raised right arm of a woman, and incorporating the slogan "Fight Cancer With Knowledge." The other was a more somber picture with a purple background and a shaft of light focusing on two small crusading figures. All lettering in this design was at the bottom of the drawing.

"Let's select the picture with the shaft of light," said one of the judges. "It is unusually moving, with a religious quality that suggests the crusading spirit of the Women's Field Army. Isn't that what cancer control is: a shaft of light out of darkness?"

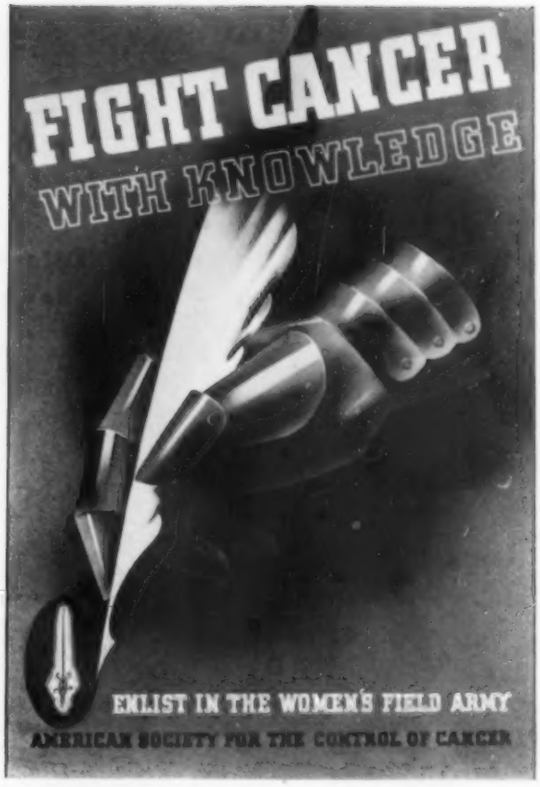
"All true," was the reply, "but we must have a poster that will complete effectively, as a poster, with other ideas that demand the public's attention. We must have a design with the punch and the dramatic appeal of an automobile advertisement. We must have something that is beautiful and arresting, something that will challenge and capture the interest of those who see it for only a few seconds, as they rush by."

This second design was given first place in the contest. The artist is a 24 year old Viennese refugee, Henry Koerner, who has been in this country only a year and a half. When the good news was telephoned to him, the young refugee was deeply moved. "I don't believe it," he said, and then his voice getting fainter and fainter, he added, "It can't be true. Is it true? Really?" Finally, with a burst of conviction, he almost shouted, "I am so happy. I am so happy." Mr. Koerner has taken out his first citizenship papers, lives in Brooklyn, and is working with the Max Bauer Commercial Art Studios. He received his art training at the State School of Applied Art in Vienna.

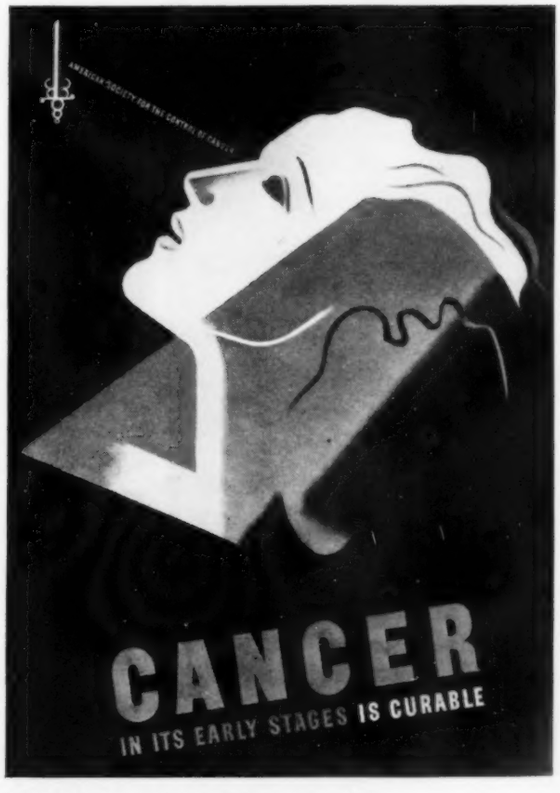
The second prize of $500 for the shaft of light poster was won by J. T. Ross, a commercial artist, of Pittsburgh. The third prize of $250 went to Her- *(Continued on page 66)*



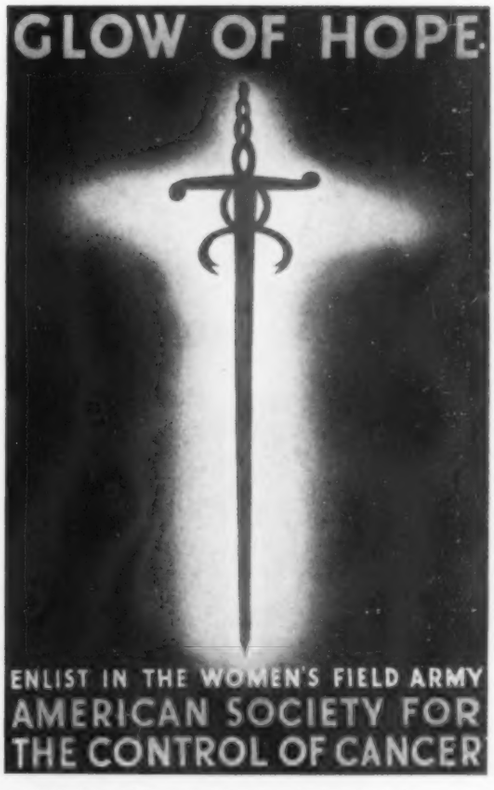
J. T. Ross, a 29 year old commercial artist of Pittsburgh, was awarded the $500 second prize.



Winner of the $250 third prize was H. R. Loges, a 29 year old, self-instructed New York artist.



Joseph Binder, well-known Viennese artist now living in New York, won the $50 fourth prize.



A $25 fifth prize was given to Henry Russell, a 23 year old commercial advertising artist.

The eye is the living camera of the body. It is an organ of the brain and, like other mechanisms, must be properly cared for, or repaired when it first functions abnormally.

EYES

By CONSTANCE J. FOSTER

Visual deficiencies may often present a serious handicap to a child's developing personality pattern. He may become shy, sensitive and retiring, or cultivate the chip-on-the-shoulder attitude toward his environment: the first is an inferiority complex; the second, a defense mechanism

THERE IS a famous fairy story by the Brothers Grimm about three little girls named One Eye, Two Eyes and Three Eyes. Because little Two Eyes was just like other people, her sisters scorned her. But One Eye and Three Eyes are psychologically sound prototypes of today's visually handicapped children.

We might call them little Four Eyes because they have to wear glasses. This frequently has one of two unfortunate effects on personality development. Children may either become shy, sensitive and retiring, or else they cultivate a chip-on-the-shoulder attitude toward life as little Two Eyes' sisters did. The former is an inferiority complex, the latter a defense mechanism.

Let me give you an example taken from modern life instead of a fairy story. Beth was cross-eyed from birth. Her parents quarreled so much over whose side of the family was to blame for the congenital defect that they finally separated. Beth was put in an institution and at 7 she was a bashful, timid child who hesitated to speak above a whisper. She never joined in the games with the others. They had teased her and being lonely seemed preferable to the hurt of being taunted.

Then Beth was taken to a clinic and eventually to a big city hospital for an operation on her twisted eye. Today she is a beautiful little girl with two normal brown eyes, again back in her own home with her reunited parents. But she is finding it hard to conquer the diffidence and lack of self-confidence that became a part of her personality pattern during the years when other children called her "Squinty."

The boys didn't call Joe "Squinty." They called him "Cockeyed." A boy of Joe's spirit just couldn't take that sort of thing. So Joe would remove his glasses, place them carefully on his pile of schoolbooks, and pitch into his tormentors. In spite of the fact that he was practically blind without his spectacles, Joe succeeded in landing enough blows to paint numerous black eyes and win himself the reputation in the neighborhood of a thoroughly "bad" boy. Joe was responding to his handicap like little Two Eyes' sisters. He is rapidly becoming an antisocial individual because he feels it necessary to defend himself against a world that he faces with the burden of a visual defect.

Proper medical attention, administered at the first symptoms of visual abnormality, would solve most of these personality problems. The child who becomes an unhappy, maladjusted individual is not the one who has a visual handicap with which to start life. He is the child whose handicap is neglected or goes unnoticed until it is too late to help him.

The eye is the living camera of the body. It is properly an organ of the brain and like any other mechanical device it needs to be taken care of, kept in good working order, and repaired when it fails to function normally. Sometimes the lens is not accurate, the shutter fails to work, or the plate on which the image is recorded is defective. The result is that the picture is indistinct.

If the eyeball is too long, for instance, or the cornea and lens are too curved, the condition

known as near-sightedness occurs. Objects at close range are seen clearly, while those further away are blurred. An eye with these abnormalities will bring the image of distant objects to focus in front of the retina, but the condition may be corrected by using concave lenses to move the focus back. Children may become permanently near-sighted by the age of 4, and sometimes even earlier.

If the eyeball is too short, or the cornea and lens are insufficiently curved, the eye is far-sighted and cannot see objects at a close range without strain. Far-sightedness is a normal phase of the early development of the eye. In young children it is not a defect unless associated with signs of strain, or an evidence of cross-eye. Far-sightedness requires excessive muscular accommodation in order that the image may be focused on the retina. Sometimes this causes headache, eye fatigue, and a tendency to develop a squint. If discovered in time, the child can be prevented from developing strabismus, or crossed eyes, by the use of proper glasses to relax the accommodation. Glasses with convex lenses correct the defect.

If the cornea is not a section of a true sphere, the image reflected on the retina becomes untrue and a condition called astigmatism results. The eye does not act uniformly over the field of vision. The lens brings vertical lines into sharp focus, but blurs horizontal ones, causing distortion of the image. The child has to strain in order to see, and the resultant fatigue causes the sort of touchiness that makes him tearful on slight provocation. Cylindrical lenses, set at the proper angle, correct astigmatism.

Double vision can result from crossed eyes or what the doctor calls strabismus. What frequently happens, however, is that the image is suppressed from one eye. This may result in a greatly reduced central vision in the eye that is not used, much as an arm is helpless for a long time after it has been taken out of a splint.

There are many varieties of squint or crossed eyes. Those due to far-sightedness are often correctable by the use of glasses, special exercises, eye patches or covers of various types worn over the good eye to encourage the use of the poor one, or surgery if indicated.

Treatment should be begun early or progress is slow. No matter how young the child is, he should be taken to a physician if his eye turns persistently. A prompt diagnosis is most desirable for the earlier the child is placed under expert care, the greater the possibilities for a cure.

Crossed eyes are such a serious handicap to any child's appearance, as well as to his optical efficiency, that it is criminal neglect to ignore the condition in the hope that he will "grow out of it." When he does appear to do so, it is almost invariably at the cost of lost vision in either eye.

The cause of crossed eyes varies. It is often hereditary and is passed on by the parent whom the child resembles facially. If the condition is congenital it may show up at birth or develop at any time up to the sixth year. Eyes may cross because the muscles bringing the eye toward the nose are too strong or not strong enough. Or fibrous tissue instead of muscle tissue may have developed before birth. Also, one eye may be higher than the other. Nerves supplying the eyes are occasionally injured at birth, causing paralysis of vertically acting muscles.

Children, who for any reason are able to get a clearer vision with one eye, tend to use the "boss" eye, thus retarding the development of the unused eye. Eventually the eye with poorer vision turns in toward the nose. It is far easier to prevent such difficulties than to cure them. The child who shows a persistent head-tilt of any sort should be examined at once for the eye muscle defect that may result in crossed eyes unless he receives the proper attention and prompt treatment. Sometimes the head is turned to one side, rather than actually tilted. In either case the reason is the same. The child is attempting to keep his head in the position where he can maintain binocular single vision and see objects as one image.

Often, the first tendency to squint is noticed after an illness, or when the child is fatigued. Eyes are a living part of the body and subject to the same physical laws as arms and legs. During convalescence from any prolonged or serious sickness, the eyes are weak and in need of special protection from strain. Yet this is the time when the child is frequently given books to read, or amusements that require close visual application. It would be wiser to encourage periods of rest for the eyes by reading aloud to the child, or to provide him with projects that do not overtax the already weakened nerves and muscles of the eye.

So far only children with abnormal vision have been considered. However, if both par-

ents have good eyesight, the chances are that the offspring will inherit it. But even children with excellent vision need to have their eyes safeguarded by intelligent home and school protection. An adequate diet, rich in vitamin A, for which eyes as well as other body tissues can be starved, is important. Foods abundant in vitamin A include whole milk and cream, butter, egg yolks, tomatoes, leafy green vegetables, and the yellow-colored fruits and vegetables such as carrots, sweet potatoes, peaches and apricots.

Eyes must be shielded from strain both in the early pre-school years and after formal education begins. Too much light causes glare and is as equally harmful as too little light. Small print, shiny paper, improper angle of vision and reading while lying flat on the stomach must all be avoided. The child should never be allowed to read facing a light. The desk or table at which he works ought to be high enough to prevent his stooping. Work held 13 to 15 inches from the bridge of the nose is easiest on eyes.

Play hazards to eyes are numerous. Certainly no child can safely be permitted to handle sharp instruments such as knives, scissors, nails, wires, hooks and pointed sticks. Toys should be selected with an eye to censoring the dangerous ones with sharp edges. Toy cap-guns and air rifles have no place in the home that wants an eye-safety record. Children can be taught from the earliest years to value their eyes and protect them from such risky games as shooting elastic bands at each other, a seemingly harmless amusement that has been responsible for the loss of many eyes. Fireworks also are a source of many eye injuries. Even so-called "safe" torpedoes have been known to cause blindness when the small pebbles they contain have penetrated an eyeball.

Every child should have a thorough test for visual acuity before entering kindergarten or first grade. It is not necessary to know the letters of the alphabet in order to take this test. By means of the Symbol E Chart, the child is shown how to play a game in which the letter E becomes a three-legged animal. With one eye closed, he determines in which direction the legs of this animal are pointed, and thus reveals to what extent his range of vision is limited.

The eye examination should be repeated yearly for modern education puts a heavy strain on eyes and *(Continued on page 50)*

Danger Signals!

Normal vision is considered the ability to see objects at a distance of 20 feet, or more, without difficulty. Children should be watched for the following symptoms of visual abnormalities. If any of these easily noticeable behavior reactions appear consistently, the child should be placed at once under the observation of an ophthalmologist, or eye physician.

1. Blinks continuously when using the eyes for close work.
2. Attempts to brush away a blur from the eyes.
3. Cries easily or has frequent temper tantrums.
4. Holds objects close to the eye when examining them.
5. Seems tense or appears uninterested when watching distant moving objects such as an airplane in flight, or a parade.
6. Frowns and scowls or become irritable over tasks.
7. Consistently selects small toys to play with and keeps face close to them.
8. Rubs the eyes often.
9. Distorts face when trying to see nearby or distant objects.
10. Shuts one eye or covers it with hand when trying to see things.
11. Tilts or thrusts head forward.
12. Does not attempt to catch ball when it is tossed to him.
13. Complains of dizziness, headache or nausea.
14. Has red rims on eyelids, crusts among lashes, swollen or watery eyes.
15. Tends to be cross-eyed on any occasion.

By SAMUEL R. LEWIS

FALSE TEETH by MAIL!

DENTAL PLATES
On 10 Day Trial
FREE!
$4.98
WHY PAY $50 to $75 FOR PLATES?
To introduce our new "Hold-Fast Dental Plates" in your vicinity, we will send you a complete set or just an upper plate or a lower plate as may be required on FREE TRIAL. No continuous, painful impression-taking or expensive visits to the Dentist, or need to spend large sums of money to have the comfort and pleasure of comfortable fitting dental plates. HOLD FAST PLATES will improve your appearance, give you comfort—they are light weight, and look natural. Why pay $75.00 and up for plates elsewhere when you can get plates just as good from us for as low as $4.98? Fill out and mail the coupon at once. Don't delay while this special offer is on. Mail the coupon today!
Chicago Dental House, Inc.
DEPT. F-186, 1445 W. JACKSON BLVD. CHICAGO
Free Trial
COUPON
CHICAGO DENTAL HOUSE, INC.
Dept. F-186
1445 W. Jackson Blvd.
Chicago, Ill.
Gentlemen:
I want to try your plates.
Name.....
Age.....
St. and No.....
R. F. D. ..... Box.....
Post Office.....
State.....

DURING the past few years a number of advertisements offering to supply false teeth by mail for so-called "sensible prices" have frequently appeared in certain types of magazines and newspapers. These advertisements stated that the purchaser would be supplied with teeth which would "fit rite" and give guaranteed satisfaction. Other inducements offered were a sixty-day "money-back" guarantee and the privilege of paying for the teeth on the installment plan. The advertisements conveyed the idea that it was a simple matter for a person to take an impression of his own mouth and that perfectly fitting dentures could be constructed from such an impression. Moreover, since it was clearly stated that the purchase price would be refunded without question if the teeth were not completely satisfactory, it did not appear that anything could be lost by trying the scheme.

Under the influence of these promises, a number of persons who may have been hard pressed financially, or poorly located with respect to a competent dentist, were persuaded to write to these mail order teeth concerns and ask for further information. Persons who expressed a desire to purchase the teeth, or merely showed a slight interest in the offer, promptly received a small cardboard box containing a piece of impression compound which looked not unlike paraffin. This compound was shaped so that it would fit into the average mouth. The instructions stated that this material was to be softened in warm water and then bitten to give the company a "general idea" of your gums. "From it we will make for you another piece of material that will exactly fit your mouth. This second piece we will send to you in the next mail. With it you can quickly take the impression we need for your plates."

The cardboard box would also contain elaborate pamphlets which illustrated the various types of dentures available, and also stated the different prices. Interestingly enough, the less

AMAZING OFFER!

DENTAL PLATES ON 30-DAY TRIAL FREE!

WAS $50 NOW $7.50

100% SATISFACTION OR NO COST

WHY PAY $50 to $75 FOR PLATES?

This amazing offer is made to quickly introduce our new "Hold-Fast" Dental Plates in your vicinity. To prove their amazing value we will send you a complete set or just an upper or lower plate as may be required on 30 Days Free Trial! No continuous painful impression taking or expensive visits to the Dentist, or need to spend large sums of money to have the benefits and pleasures of comfortable fitting Dental Plates. "Hold-Fast" Plates will improve your appearance, give you comfort—they are light weight and look natural. All plates specially made by expert Dental Technicians to meet your exact needs. Positively guaranteed to fit you perfectly and give complete satisfaction or cost nothing. Why pay $50 and up for plates elsewhere when you can get just as good from us for as low as $7.50?

TRY THEM 30 DAYS FREE!

Just try them. That's all we ask. It's our only argument. Prove at our risk how greatly these fine, perfect fitting teeth will improve your appearance, how perfectly they will enable you to eat what you like and make you look years younger. They are odorless, tasteless, guaranteed non-breakable, and lifelike in appearance. Take advantage of this AMAZING BARGAIN PRICE and our 30-DAY FREE TRIAL OFFER TODAY.

CHICAGO DENTISTS

Dept. F115, 1445 W. Jackson Blvd., Chicago, Ill.

FREE TRIAL COUPON

Chicago Dentists, Dept. F115.
1445 W. Jackson Blvd., Chicago, Ill.
Gentlemen: I want to try your plates.

Name..... Age.....
St. and No. .....
R.F.D..... Box.....
Post Office..... State.....

The manufacturer employing these advertisements has been enjoined by the Federal Trade Commission from stating that he can make a satisfactory, properly fitting, dental plate from an impression made by the customer in his home.

expensive plates were usually portrayed in these pamphlets as shabby and lifeless looking, so that it would be a natural reaction for the customer to feel that it might be wiser to purchase a more costly set rather than the ones he originally intended to purchase.

One of the largest of these concerns has, for two years, continued to include in its circulars a low priced denture which it does not sell for regular use. In its magazine advertisements, this concern states that dentures which it sells can be purchased for as low as $6.85, but when the customer actually receives the price list, he finds that the $6.85 denture has been discontinued by the company. What the customer does not know is that this so-called "model" has been discontinued for several years and that he has been tricked into believing that the prices are lower than they actually are.

If the customer is not discouraged by this trickery, he will proceed to take the rough impression of his mouth, in accordance with the instructions, and send it in to the company indicating the price he is willing to pay. In due time he will receive a second piece of impression compound with instructions for the taking of the second and final impression.

At the time the second impression is returned to the company, the customer must either forward the full purchase price or agree to pay cash on delivery, if he wants to receive his teeth immediately. If he cannot pay the full purchase price, immediately, he is permitted to pay in installments. The unusual aspect of the installment plan offered by one of the largest of these companies is that the customer must still pay the full price (in installments) plus interest, before the teeth will be mailed to him. It is obvious that there is no advantage in using the plan under such conditions, because the purchaser is charged for the privilege of letting the company hold his money and receives nothing in return. In reality, the plan is designed to discourage installment purchase because the companies cannot afford to deliver the denture before the full price is paid, as is done in practically all other types of installment sales. In spite of this fact, they continue to advertise that the artificial teeth may be purchased on the installment plan, in order to attract customers. This is another indication of the degree of honesty typical of these concerns which advertise that they are such a boon to humanity.

All of these high pressure tactics and misleading statements might be overlooked if the customers were finally furnished with artificial teeth which fitted properly and were useful and attractive. However, the mere fact that such methods have to be employed in order to sell the teeth provides a forewarning of what the unlucky purchaser can expect in the way of satisfaction. A large number of the purchasers of these dentures were dissatisfied with the way the teeth fitted. Another

group found that they were nice enough looking, but completely unusable; others found that they were usable, but distorted the features of the wearer. Still other customers found the teeth just downright uncomfortable and could not wear them at all.

Most of these customers, taking advantage of the offers of free adjustments and money back guarantees, returned them to the seller and described their complaints. In no time at all the teeth would be returned with the statements that the necessary adjustments had been made and that no further trouble need be expected. In most cases they were still unsatisfactory, and the purchaser either returned them again with the same result, or gave up in disgust. Some people, after several "adjustment" procedures, became irritated and demanded their money back under the promised "sixty day trial period" guarantee. They were usually met with the answer that the sixty day period during which the guarantee was effective had expired. If it had not expired, the company suggested that they try a higher priced set which, it was alleged, were certain to give better results. Another method of evading the guarantee, often used, is to state that what appeared to be a defect in the teeth was merely the inexperience of the purchaser in wearing them. The customer was assured that these difficulties would disappear as he became accustomed to the teeth. Very few customers, if any, ever had their money returned. Thus, the so-called "iron clad" guarantee of satisfaction or return of the purchase price meant absolutely nothing to these concerns if the purchaser could be stalled for sixty days. And even this was not often necessary, because in many cases the defects did not become noticeable within that period of time.

Every dentist knows that it is a very difficult and complex procedure to take a proper impression of a person's mouth and construct a proper set of artificial teeth. The dental schools devote a large amount of time to teaching the proper procedure and technic. And, even with this careful training, experienced dentists say that every case presents different and difficult problems. Just as soon as these mail order schemes first began to function, the dental profession, as represented by the American Dental Association, declared that they were fraudulent, because it was impossible to produce the satisfactory results that the mail order concerns promised. By adopting mass production methods and eliminating examinations, x-rays, adjustments and other necessary procedures it is possible to produce low priced dentures, but it is not possible to produce teeth that are satisfactory with respect to their looks, serviceability or safety. The average person is no more capable of taking proper impressions and measurements of his mouth than he is capable of telling what kind of eyeglasses he needs.

The rising flood of protests from dentists, dental societies and dissatisfied purchasers resulted in an investigation of one of the largest of these concerns by the United States postal authorities. On the basis of this investigation, the Post Office Department issued an order which stated that the particular concern investigated was using the mails to defraud and that henceforth it was forbidden to use the mails in the furtherance of this scheme. Subsequently, the question of the validity of this order of the Post Office Department was brought before the United States Supreme Court. The Supreme Court upheld its validity by refusing to change the previous decision of a lower court to the effect that the business was fraudulent.

The evidence, on which the issuance of this Post Office fraud order was based, contained some very interesting information on the conduct of these schemes and the experiences of the customers. One of the witnesses, who testified at the hearing conducted by the Post Office Department, was a United States Public Health Service dentist who had been sent out to examine 50 persons who had purchased and were wearing mail order dentures. He reported, "that in not a single instance had properly fitting, or functioning, teeth been furnished." He also found a number of other conditions such as the new plate resting on diseased roots; protuberance of bone, preventing the plate from fitting properly; complete lack of retention; lips forced apart by teeth; teeth lower on one side than the other; marked irritation of tissues and many similar conditions.

Other particularly interesting evidence, presented by the postal authorities, consisted of deleted portions of letters which had been used by the mail order concern as testimonials of customer satisfaction with the plates which had been sold to them. Some of the letters had contained the following statements:

"They seem to be a little loose as I cannot keep them in my mouth without using the dental powder, and I *(Continued on page 42)*

Young America!

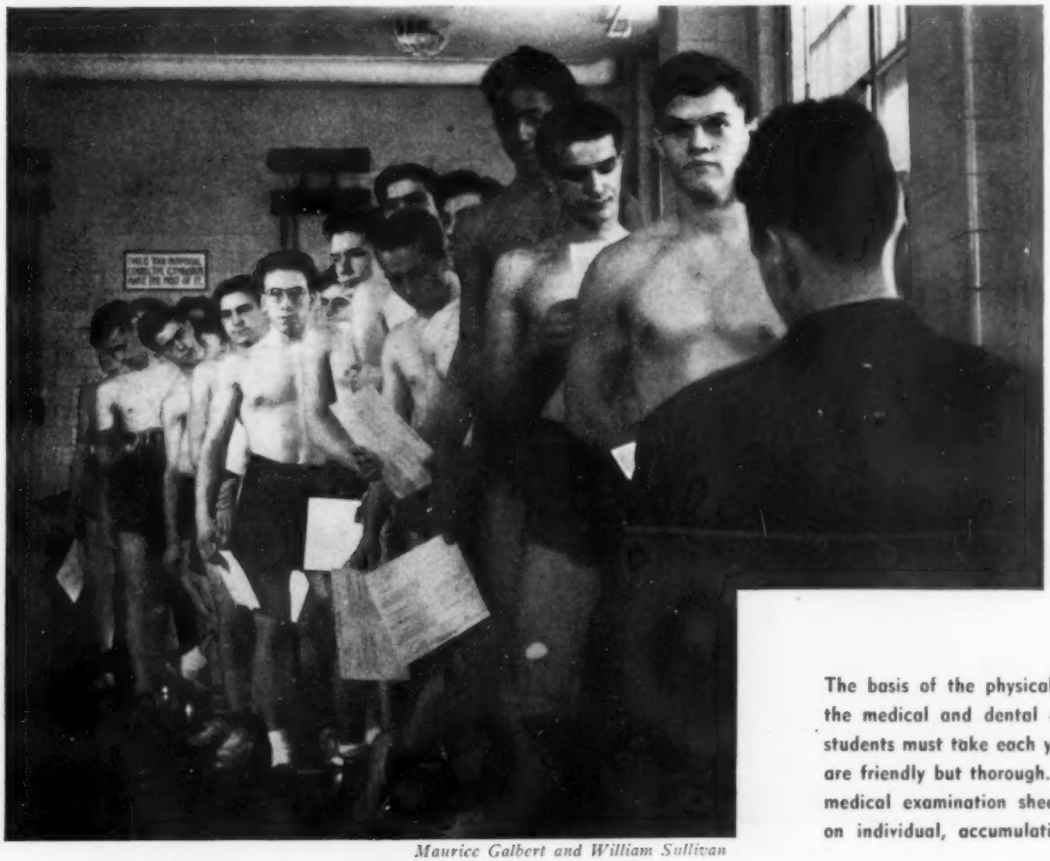
By JOHN H. SHAW

EVER since the last World War, the people of the United States have realized the necessity of making the youth of America physically fit. As a result of this awakening, a program of health and physical education was organized. Today, in many American high schools, this program of health and physical education is producing students who have corrected their remediable defects, have had a vigorous program of physical activity, and have a knowledge of personal hygiene and first aid.

Physical fitness is developed by the "activities program" which includes body building exercises; athletic skills; apparatus work on the "horses," parallel bars, horizontal bars, mats and ropes; and recreational games, such as mass games and push ball.

The value of rhythmic exercises is also not overlooked, for dances such as the Highland Fling and the Russian Kamrinshia are employed to create stamina, coordination, and agility. Swimming is also an integral part of the health program, and each student is given the opportunity to learn to swim, and is programmed for regular swimming classes.

Supplementing the athletic program is the intramural organization which coordinates the student body in competitive athletics. These games, played under favorable conditions, develop keen competition, and provide an excellent conditioning process.



Maurice Galbert and William Sullivan

The basis of the physical education program is the medical and dental examinations which all students must take each year. The examinations are friendly but thorough. Defects are noted on medical examination sheets, and then recorded on individual, accumulative "follow-up" blanks.

Hygiene, another important part of the health and physical education program, gives the student an essential knowledge of the care and function of the body. And, in times of national emergency, this knowledge will become inestimably valuable.

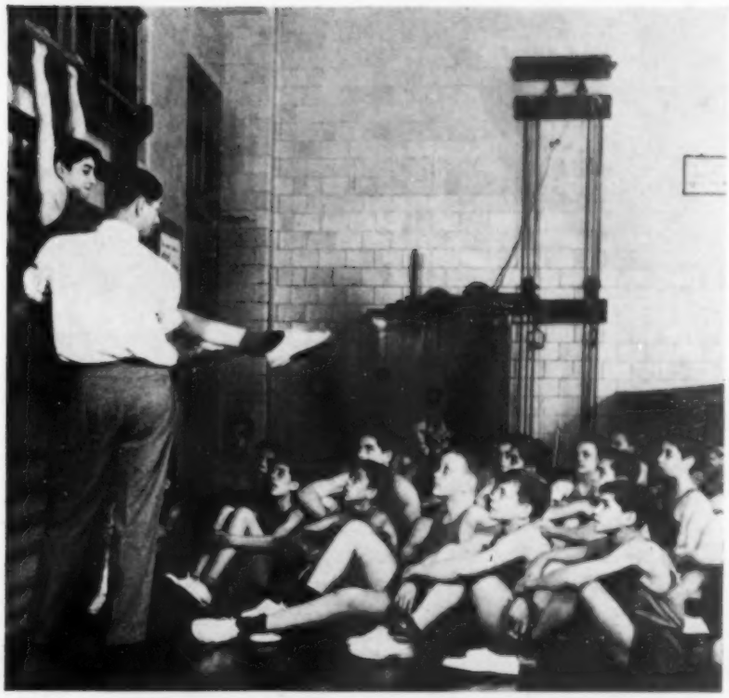
Thus, nationwide physical education has been organizing for many years, formulating procedure, and administering a program that will help the student "live most and serve best." Today these young men are ready and able to serve their country and themselves: They know their responsibilities and are willing to shoulder their burden, confident that they are physically fit and mentally alert as modern education and health training can make them.

Foot health is necessary for physical health.

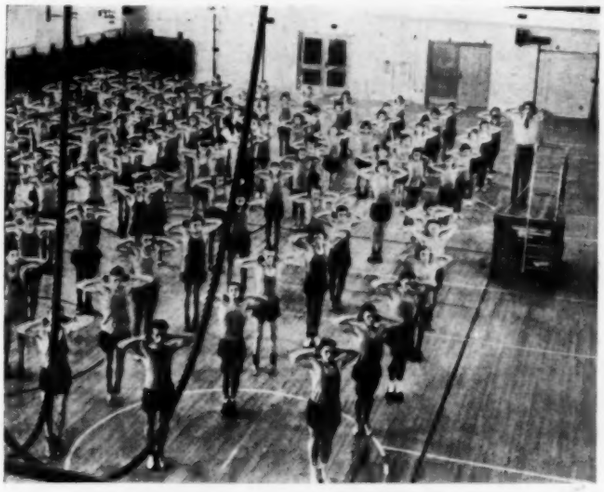
Both parents and school authorities are notified if these examinations reveal remediable physical imperfections. Parents who cannot afford private medical care are given a list of clinics, where inexpensive medical care may be obtained. School officials can correct some defects with exercises.

Examinations of the throat are also necessary.

The condition of the ear passages is checked.



Students having defects that can be corrected by physical exercises are assigned to special classes. A primary objective of this program is to return the students to normal activities, after the defects have been minimized. Usual disabilities include weak or flat feet, over or under weight, and numerous posture deviations.



Group exercises teach muscular coordination.

Specialized apparatus promotes athletic skills.

Hygiene provides a knowledge of body functions.

Boys learn to play the game, follow the rules.

INTELLIGENCE

THERE'S an old saw that defines intelligence. It runs to the effect that "intelligence is what is measured by intelligence tests." And there is much truth in the definition even though its implications are cynical. Because, unless one has observed the behavior of a fellow human for a long period of time and in all kinds of different situations, it is impossible to secure even an approximate estimate. A microscopic examination of his brain will not disclose its mental capacity, even supposing that it were not necessary to wait for his death to find out. Not, of course, that it matters much in social relationships what these capacities are, so long as he proves pleasant, sympathetic and understanding.

As carefully limited instruments, intelligence tests are extremely useful, not for absolute but for comparative evaluations. But they must be considered and interpreted within their limitations. Unfortunately, much more has been claimed (and disclaimed) for them than was ever intended by the psychologists who devised them. A thousand objections to them have been raised, most of them based on misunderstanding of their purpose, or mere personal prejudice.

To begin with, an intelligence test estimates only one thing—intelligence. It does not pretend to investigate temperament, personality, character, social attitudes, prejudices, special talents or personal maladjustments. Any test that attempts to measure any one of these factors is so named and measures only one. It would be just as unreasonable to expect an intelligence test to measure all these things as to assume that a physician can give a complete health report from an eye-test or that a weight-scale can tell why one is short of breath.

No one can dogmatically define intelligence. But persons of common sense seem to agree that the solution of certain kinds of situations calls for something, which for all practical purposes they are ready to call intelligence. This agreement is, after all, no different from the judgment of accumulated experience as to what social laws shall regulate human relationships.

Every elementary psychology textbook defines several attributes of intelligence. First, it has a certain height or level, or altitude. This is measured by the maximum difficulty of the problem that it can solve accurately. Then it has range, measured by the number of different kinds of problems that it can solve at a given level of difficulty. These two attributes are closely related, the higher level tending to insure a broader range. Last, and not as important as the first two, is the attribute of speed. Generally speaking, the better intelligence will see through given situations more

QUOTIENT

By GRACE RUBIN-RABSON

quickly and with greater accuracy. Although one would like to believe that some mechanism operates to compensate the slow with greater accuracy, such is, unfortunately, not the case. That height, range and speed show a close interrelationship has been proved time and again.

To evaluate these three aspects of intelligence, the test poses a long series of situations, ranging from easy to extremely difficult, to be solved, in most instances, within certain time limits. Such situations include all kinds of things: arithmetical calculations, reading comprehension, vocabulary facility, situations in which logical inferences and deductions must be made, working one's way out of paper mazes with a pencil, following directions, and the like. The longer they are and the more varied the items they include, the more trustworthy are the conclusions which they produce. But unless they are administered objectively and in accordance with a prescribed technic, they are worthless.

Now it will be seen that the solution of many of these items depends on school education. So the charge has been leveled that these tests are not a test of intelligence at all, but a test of environment and school training. They are both. And the explanation is simple. But in answer to this challenge, it may be noted, that mental tests have been devised which use no paper and pencil, or which do not depend on language at all.

It must be remembered that the original purpose of mental tests was to measure children's intelligence, specifically the relationship of a child's mental age to his birth or chronological age. This relationship or ratio has become the famous I. Q. or Intelligence Quotient.

The assumptions in testing children with these tests are first, that they all come from the same language-speaking population, and, second, that they are all products of similar educational surroundings. In other words there would be no sense in giving these tests to children who did not understand English or who handled it inadequately, or who went to school three months a year or not at all. Obviously, though these latter children might be as intelligent or even more so than many in the former category, they would probably not do so well on such tests.

There is not the least doubt that environment is a powerful factor in stimulating intelligence, just as an adequate diet stimulates better body growth. But it does not create or increase intelligence any more than bodily growth can be extended beyond the hereditary limits inherent in the germ plasm. As might be expected, a good native intelligence has relatively more power within itself and is capable of being more stimulated by the environment

than an inferior one. Consequently, though the native level of intelligence may remain the same throughout life, the range over which it extends may increase. The intelligence at the higher level will, on the whole, achieve a greater proportional range through the stimulation of the environment than will that on the lower level.

This is pretty much what the "environmentalists" mean when they maintain that intelligence is a matter of environment. They are supposed to be in bitter opposition to the proponents of "native" or "hereditary" intelligence (because if it is native it must come from somewhere, probably our forebears). Apparently, in taking up clearly defined sides in the controversy, both groups have had to claim more than they had originally intended. Their differences are, however, not irreconcilable.

There is a catch here, nonetheless. What is a beneficially stimulating environment, and does every one live in one? To the second part of the question, the answer is no. Children living in slum tenements with all the deadening demoralization that poverty and worry bring with them cannot be said to be enjoying properly stimulating environments. Nor, on the other hand, are rich children, possibly neglected and ignored by busy parents, necessarily better off. Simply put, interested, intelligent parents in a reasonably comfortable home, organized play under competent guidance and adequate school facilities, are the minimum requirements for an environment which will develop the intelligence to something approaching its latent possibilities.

In a sense, then, intelligence tests are testing the action of the environment on the intelligence. But if the environment is similar, or at any rate comparable, the differences in native mental capacity will come through.

For example, a thousand children at 10 years of age take such a test. Roughly, about 600 of them will solve a certain number of problems correctly in a given length of time. The other 400 will do both better and worse, ranging on both ends from a little to a great deal. The accomplishment of the 600 becomes, then, the standard for 10 year old children. This is, of course, an over-simplification of the method of creating and standardizing these tests, but it incorporates the basic principle of evaluating the achievement of the middle two thirds of a large number of individuals at the same age. When a 10 year old child can reach the 11 or 12 year standard, or some point between, then he is mentally ahead of his chronological age and it is wise to make some adjustment in his schedule so that he can utilize the margin. For all practical purposes, the child who reaches the standard set by this middle two thirds of his fellows, is the child of "average" intelligence, though he may possess all kinds of special talents not measured by such a test. Otherwise he is "superior" or "inferior," an unsatisfactory designation, at best, in view of the number of other factors that contribute to a successful personality.

A child who scores high on these tests needs little investigation. In the case of the child who does poorly, or not as well as he might, the situation must be thoroughly analyzed by experts. Has he exerted his maximum effort, or is he uncooperative and indifferent? Is he well? Are his eyes good? Is he upset by family difficulties, by the economic situation at home? Is he lethargic from fatigue, malnourishment or endocrine imbalance? Are his arithmetic and language skills basically unsound, due to poor teaching? Is he particularly successful with certain types of items on the test, particularly unsuccessful with others?

Without this analysis, the test score alone is meaningless. Only when all the difficulties have been removed and the child retested can any reliability be placed in the score. For a dependable diagnosis in uncertain cases, the results of one test are inadequate, and a battery of tests is more definitive.

Attempts have been made to compare the intelligence of children, and even of adults, of other countries and other civilizations with natives of the United States on the basis of these and other tests. This is very like trying to measure a curved line with a straight ruler with the inevitable necessity of rationalizing both to explain the result.

In the first place, the tests must be translated into another language, which even among groups which think somewhat alike is only an approximation of the exact shade of the original thought. In the second place, different traditions, customs and objects exist in different environments and by the time more familiar items have been substituted, the situation is no longer the one which was so carefully standardized. Third, social habits may militate against securing cooperation from those tested.

For example, in a community enjoying a communal form of *(Continued on page 67)*

"Is There a Baby in the House?"

MOTHER'S PROBLEM OF PROVIDING ABUNDANCE OF VITAMIN D IN WINTER MAY BE SOLVED THIS EASY WAY!

1. My mommie knows I'll have a better chance to grow big and strong if I get plenty of vitamin D. That's the vitamin that makes it possible for me to use the calcium compounds in my food for building sturdy, straight bones and sound teeth. Without vitamin D in some form, I'd be rickety.

2. She says no vitamin is more important than vitamin D while I'm growing so fast. But hardly any foods have any vitamin D at all. There's none in fresh fruits, vegetables, plain cereals or meat. That's why some dairies add vitamin D to their milk.

3. Our doctor says that in my skin are tiny vitamin factories that make vitamin D when any part of my body is exposed to the sun's ultra-violet rays. But I don't get out much these cold days, and the sun's rays during winter are pretty weak anyway.

4. Lucky for me my mommie bought a General Electric Sunlamp. My little vitamin D factories go to work, whether it's the sun's ultra-violet rays or the ultra-violet rays of my General Electric Sunlamp. Now I get as much ultra-violet effect in six minutes as in two whole hours under the winter sun.

Now It's So Easy to Make Every Day "Sun" Day!

In choosing a sunlamp for its beneficial effects, what better authority could you possibly follow than the Council on Physical Therapy of the American Medical Association. This Council has tested the ultra-violet radiation of the General Electric Sunlamp for inclusion in the Council's list of Devices, and permits the use of its Seal of Acceptance. This distinction may explain why so many physicians recommend the General Electric Sunlamp. See it demonstrated today at any leading department store. Priced from $29.95. (Slightly higher in western region.)

You Too Need Vitamin D

To help your teeth keep their soundness, vitamin D and calcium compound must work together with other factors of the well balanced diet. A short exposure every day will provide vitamin D and also give your complexion that popular outdoor tan.

Send for the very latest novelty for keeping a dramatic record of your child's growth . . . the G-E Sunlamp Tel-A-Hite Tape, printed in full colors. Simple, easy, permanent. Use coupon below.

General Electric Co.
Advertising Department, EG-131,
Bridgeport, Conn.

Please send me the G-E Sunlamp Tel-A-Hite Tape and "JUST WHAT THE DOCTOR ORDERED," your newest booklet on the necessity of vitamin D. I am enclosing 10¢ to cover postage and handling.

Name.....

Address.....

City.....State.....

GENERAL ELECTRIC
Sunlamps

"THE SUREST WAY OF PREVENTING

Pneumonia..."

ACCORDING TO an eminent physician, "The surest way of preventing pneumonia is to eliminate the common cold and other respiratory infections."

This is because pneumonia rarely

Remember, colds are contagious. Thoughtful people cover up coughs and sneezes.

strikes out of a clear sky; usually it is preceded by a cold, influenza, or some other infection of the breathing passages. How, then, can one guard against the dangerous cold?

... By keeping away from people who have colds and avoiding contact with crowds as much as possible. By getting daily outdoor exercise and keeping in good physical condition. By getting adequate rest and keeping properly clothed. By avoiding over-heated rooms. By eating properly—not *over*-eating—and being sure to get plenty of protective foods like green vegetables.

Daily exercise pays dividends in pleasure and good health.

At the *first sign* of a cold, proper treatment should be started and kept up as long as the cold persists. If the cold becomes severe, the safest course is to go to bed and call your doctor.

Pneumonia strikes most frequently during the first three months of the year. So it is particularly important, during this period, for you to be on the lookout for pneumonia's most common warning symptoms such as:

Sudden chill ... fever ... pain in side ... cough ... thick, rust-colored sputum ... hurried, somewhat labored breathing.

When any one or any combination of these symptoms is present, a doctor should be called *at once*. For if the illness *is* pneumonia, he will then, while there is still time, have the best opportunity to use successfully the effective weapons of modern science.

Only a few years ago, the doctor was relatively helpless in the face of pneumonia. Today, he has means of more certain diagnosis ... including methods of determining more accurately the type of pneumonia. Furthermore there are highly effective serums and chemical agents

Proper clothing is important to the health of the whole family.

to use separately, or in combination, in treating a particular case.

These new developments have been responsible for an amazing reduction, in the past three years, of about 50% in the death rate from pneumonia.

But—most important—the doctor must have the chance to use his skill against pneumonia *early!*

Metropolitan's free booklet, "Colds, Influenza, Pneumonia," contains many valuable, practical suggestions to help you ward off trouble at this time. Write today to Dept. 141-Z.

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FALSE TEETH by MAIL

(Continued from page 34)

don't want to keep on using the powder, though I'm afraid if they are made smaller they will hurt my gums."

"My upper plate fits fine. I am not having trouble wearing them, but the under works it up if I talk and jumps out of place when I try to eat with them."

This and other evidence made it clear that these mail order teeth did not only fit improperly but also, in many cases, caused soreness and discomfort. If dentures such as these were worn continuously they might cause serious injury. In the face of these facts, it was clear to the postal authorities and the federal courts that these schemes were fraudulent and must be stopped.

Since then, the government has conducted a vigorous campaign aimed at the elimination of these concerns. Faced with the threat of a heavy fine and jail sentence, the proprietors of two such concerns have recently pleaded guilty to the charge of conducting a fraudulent scheme and have thrown themselves upon the mercy of the courts. Others have noticed the way the wind was blowing, and have "folded their tents like the Arabs."

One or two of these concerns are still in existence, but the experiences of previous purchasers have shown that it is still impossible to get "something for nothing." The mail order plan may work admirably for the sale of many types of articles other than artificial teeth, but it cannot be substituted for the training and painstaking personal examinations and adjustments which are essential to satisfactory professional care.

PAIN and DIAGNOSIS

A critical study of the type, position and source of pain is important not only in the recognition of ulcers of the stomach and duodenum but also in determining a good deal about the extent and severity of the condition, Andrew B. Rivers and John W. Gardner, Rochester, Minn., declare in *The Journal* of the American Medical Association.

Hand Made Mercy

(Continued from page 20)

in order to participate in the metropolitan chapter's production program. Indeed, in several instances, chapters have reported that they have about as many volunteers from out of town working for them as they have residents.

Occasionally the Red Cross is asked whether the great enthusiasm shown by some women for surgical dressing work is not in the nature of a definite emotional release, and whether their labors of mercy are not actuated by the need for an emotional outlet which they cannot find elsewhere. But even if these reasons were true, they would not detract from the value of the production work itself, nor would they render less praiseworthy the volunteers' willingness to do the work. Many women require some sort of emotional outlet for their personalities, and those who make their escapes from the eternal grimness of things in doing good for others, especially at a time like the present, should be praised.

Conceivably, too, this sort of work—the calm, quiet, meticulous rolling of bandages—has a positive therapeutic influence on the feminine temperament. Psychiatrists have been known to recommend to overwrought female patients that they volunteer to produce Red Cross surgical dressings during a period of months. One such case brought to the attention of Red Cross national headquarters recently was that of a woman who, having suffered a partial nervous breakdown as a result of losing her husband in an automobile accident, gradually was restored to normal mental health by spending five afternoons a week in the surgical dressing production room of her local Red Cross chapter house. In another instance a young high school girl cured herself completely of the habit of biting her finger nails by rolling dressings and bandages for the Red Cross.

But aside from the humanitarian relief it affords stricken populations in Europe, and apart also from the invigorating effect it has on those volunteer workers who engage in it, the surgical dressing program of the Red Cross has still further beneficial consequences which most people overlook. First, it familiarizes women with the making of bandages so that if an accident occurs in the home they can improvise dressings for the victim's injuries until the doctor comes and second, it builds up a trained surgical dressing production corps which undoubtedly would be of inestimable value to this country in times of national emergency. Both these latter facts are well worth considering in any appraisal of Red Cross production work.

Like many another unsung heroine, the kindly Red Cross volunteer who lets her womanly instincts lead her to Red Cross chapter's surgical dressing production room may be performing a greater service for herself, her country and the world, than she or any one else suspects.

HOW TO MAKE THE MOST OUT OF LIFE...
Start your day with a delicious bowlful of crisp Post's 40% Bran Flakes—the cereal with two important extra benefits!
MORE POST'S BRAN FLAKES, DEAR . . . THIS SWELL NUT-LIKE FLAVOR JUST CAN'T BE BEAT!
Post's 40% Bran Flakes
Wheat
A POST CEREAL MADE BY GENERAL FOODS
POST'S 40% BRAN FLAKES OFFER TWO IMPORTANT EXTRA BENEFITS
First, Post's 40% Bran Flakes provide bran to help protect against sluggishness. Constipation due to insufficient bulk in the diet should yield to Post's Bran Flakes when eaten regularly as a cereal, or in hot bran muffins. (For cases not corrected in this simple manner, we advise consultation with a physician.)
Second, Post's Bran Flakes are a good cereal source of phosphorus, iron, and Vitamin B1—an essential for maintaining good appetite and abundant energy.
Enjoy Post's Bran Flakes every morning . . . to help "make the most out of life"!
LIFE IS SWELL WHEN YOU KEEP WELL

Foods That Provide Vitamin B_1

From the Office of the Council on Foods and Nutrition

VITAMIN B_1 is probably the vitamin which is most apt to be low in the American diet. In some parts of the country where pellagra is prevalent, the deficiency of nicotinic acid may be more important. Dietary surveys indicate that the intake of vitamin B_1, particularly in low income groups, is not sufficient for the best of health.

Until the introduction of modern white flour in the latter part of the nineteenth century, bread ordinarily was made from whole grain flour. Whole wheat bread is much more nutritious than the white bread for which a strong public preference exists. Whole wheat is a good source of vitamin B_1, but four fifths of this vitamin is removed in making white flour. This vitamin is not "lost" because it has gone for feeding farm animals.

The effect of modern milling practice on the vitamin B_1 content of the wheat used for human consumption is shown in the accompanying data where it can be noted that whole wheat bread contains at least four times as much vitamin B_1 as white bread.

Product	Vitamin B_1 International Units Per 100 Grams
Whole wheat grain	186
Flour:	
Stone ground	160
94% extraction	120
75% extraction	40
70% extraction (ordinary white flour)	37
60% extraction	24
Bread:	
Whole wheat	95
White	22

The American Medical Association's Council on Foods and Nutrition has encouraged both the wider use of whole-grain products and the addition to white flour of vitamin B_1 and certain other dietary essentials to bring the white bread up to the level of the wheat grain.

While products made of white flour are wholesome foods, the Council on Foods and Nutrition emphasizes that the inclusion of large quantities of vitamin poor foods in the dietary requires extraordinarily careful planning of menus in order that the essentials for adequate nutrition may be included in the diet. Most persons are not sufficiently informed on the vitamin content of foods to plan adequate meals, unless menus are built on the foundation of whole grain cereals, milk, vegetables and fruits. The safest way to insure an adequate diet is to include adequate amounts of these protective foods.

The amount of vitamin B_1 needed each day depends on a great many factors, such as age, activity, state of health and caloric intake. The Council believes that the diets of small children should provide at least 200 international units of vitamin B_1 daily and the food of older children and adults, not less than 300 international units.

Good amounts of vitamin B_1 can be obtained from the following foods: Whole wheat products, oatmeal, brown rice, eggs, lean meats (especially pork), potatoes, beans, peas and even peanuts.

Whole wheat products and rolled oatmeal rank first as the most important sources of vitamin B_1 in the human diet. One slice of whole wheat bread provides about 22 international units of vitamin B_1 (calculated on the basis of 20 slices for each pound loaf of bread). One slice of white bread enriched with high vitamin B_1 yeast or high vitamin B_1 bread ingredient or made from white flour restored to the vitamin B_1 content of whole wheat will also provide 22 international units of vitamin B_1. Six slices of either whole wheat bread or enriched white bread would supply two thirds of the daily minimal adult requirement for vitamin B_1. A serving of rolled oats provides about 60 international units of vitamin B_1 or one fifth of the daily minimal adult requirement for this vitamin. The cheapness of these foods makes them particularly valuable as sources of vitamin B_1.

Dried beans, peas, peanuts and nuts are the next best plant sources of this vitamin. Fresh vegetables, asparagus, lima beans, green peas, squash, cauliflower and mushrooms also contain vitamin B_1, but their high water content prevents them from playing a very important role. When purchasing these foods the housewife should remember that the vitamin B_1 content of green plants declines with advancing age and is at a maximum in the young plant; therefore, it is best to purchase young and succulent vegetables whenever possible.

Vitamin B_1 is readily soluble in water. When vegetables are cooked in large quantities of water much of the vitamin B_1 may be transferred to the cooking water. For this reason, many authorities recommend that vegetables should be cooked in a small amount of water and the water in which the vegetables are cooked be utilized in some way. The use of soda in cooking should be discouraged because the alkalinity it produces destroys vitamin B_1.

Small quantities of vitamin B_1 are found in apples, avocados, bananas, prunes and figs; since these fruits are eaten in their fresh state they

constitute important sources of this vitamin.

Meats are good sources of vitamin B_1. Lean pork is one of the richest sources of this vitamin; one pork chop, if properly cooked, will supply the minimal daily requirement of vitamin B_1, or about 300 international units. Even after pork hams have been processed commercially they are still good sources of vitamin B_1. The best way to preserve vitamin B_1 in meat is to broil it. Long cooking processes, like roasting or stewing, destroy about 50 per cent of the vitamin B_1 content of the fresh meat.

The vitamin B_1 content of some common foods is shown in the accompanying table. The data shown in the table are cited from the United States Department of Agriculture, Technical Bulletin, No. 707, "The Vitamin B_1 Content of Foods in Terms of Crystalline Thiamin," by Lela E. Booher and Eva R. Hartzler.

THE VITAMIN B_1 CONTENT OF SOME FOODS

FOOD	Vitamin B_1 per 100 Gm. (3½ Ozs.) International Units
CEREALS:	
Corn meal, white	101
Corn meal, yellow	78
Oatmeal "quick cooking"	270
Oats, rolled	242
Rye, whole	156
Wheat, whole	175
Wheat, shredded	73
EGG, FOWL AND MEAT:	
Egg yolk	118
Milk powdered, skimmed	125
Beef, lean, muscle	38
Chicken, dark meat	37
Chicken, light meat	26
Lamb, lean muscle	79
Liver, beef	89
Pork chop (lean portion)	455
Pork, ham, smoked (lean portion)	475
VEGETABLES:	
Asparagus	59
Beans, lima, dried	170
Beans, lima, green	114
Beans, navy, dried	128
Broccoli	33
Brussels sprouts	57
Cauliflower	56
Corn, sweet	40
Kale	63
Okra	42
Peas, green	130
Potatoes, white	50
Soya beans, dried	485
Spinach	35
Sweet potatoes	31
NUTS:	
Peanuts, whole, roasted	78
Walnuts, English	114

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What is soft-curd milk?

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How does oleomargarine compare with other fats in digestibility?

Why are fish and sea foods so desirable in the diet?

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How do salad dressings differ from mayonnaise?

Does gelatin increase physical endurance?

Are sweets desirable for children?

What nutrients do mushrooms provide?

SUPER VEGETABLES for HEALTH

By S. R. WINTERS

Titration tests are used by the Bureau of Home Economics to determine the vitamin C or scurvy preventive content of oranges.

U. S. Department of Agriculture

For dietitians and others who plan diets, the Bureau also analyzes protein, fat, carbohydrate and mineral composition of various foods.

PEDIGREED vegetables and fruits may be the next step in our national quest for vitamins. Scientific investigations now being carried on by the Federal government will make you think twice before you assume that all rich-looking carrots have the same amount of vitamin A, that all lemons are equally rich in vitamin C.

Although present-day knowledge of dietetics is a thousand times more complete than that possessed by our ancestors, we still have much to learn; how much, government scientists are only beginning to discover.

Pale, listless farm youngsters in sun-drenched Florida have given scientists much to think about. These children are not the spectacular, underfed victims of rickets, pellagra, or scurvy. Their illness has a negative rather than a positive quality; they lack energy to play, they are puny and sickly without being really malformed—more unhealthy than "sick" in the usual sense of the word.

But that they are unhealthy in the face of relative plenty is the surprising fact. Their diets usually include fresh fruits and vegetables, milk and meat, all produced in their

own neighborhood. Yet in spite of this, examination of these children revealed that the majority of them were suffering from a deficiency of red corpuscles, caused by too little iron in their food.

Hookworm was at first thought to be the cause of this anemia, but when the condition persisted even though no worms were present, further search showed an iron deficiency. And the original culprit was the soil in which the children's food was grown. In one section of rural Florida, investigated by Dr. Ouida Davis Abbott of the State Agricultural Experiment Station at Gainesville, a soil deficient in iron and a population 96 per cent of whom were suffering from nutritional anemia existed side by side.

Similar experiences in other sections of the country have led the Bureau of Plant Industry of the United States Department of Agriculture to set up nutritional experiment stations at Beltsville, Md., and Ithaca, N. Y., to study the relation of soil content to food values of plants. The work to be done has none of the dramatic elements usually associated with scientific discoveries. Rather, it is a task to be done with infinite patience and care for minute detail, a piecing together of bits of existing knowledge.

The scientists will attempt to discover just what elements in the soil affect the vitamin and mineral content of plants, why different species of the same plant grown under seemingly similar conditions vary in food value. Studies will be made of soils from those areas of the country known to have mineral deficiencies so that scientifically correct fertilizers can be produced. The experiments will be concerned with little-known factors, such as plant hormones and processes by by which plants obtain vitamins and minerals from the soil. Breeding experiments to perfect nutritionally superior types of plants will be conducted.

Investigations of this type must start at the beginning—in this case with the soil itself. Much is already known about the varying composition of soils and the use of correct fertilizers to supplement existing deficiencies. Any one who has tended a lawn knows about lime and phosphorus. Every farmer is aware of the values of nitrogen, of crop rotation, of soil analysis. In addition to this body of general knowledge, there are hints here and there of rare or "trace" elements which may have great significance in plant and animal nutrition.

It is known, for instance, that, though the daily requirement could be held on the head of a pin, grazing animals waste away and die if cobalt is lacking in the soil and forage crop. Cattle grazing in areas deficient in phosphorus cannot make strong bones, cannot grow or reproduce successfully.

Plant and animal requirements of these "trace" elements are minute but necessary. In their absence, plants suffer from some nutritional disease as real and as serious as rickets, pellagra, or anemia, in human beings. Substances such as boron, zinc, copper, cobalt, iron, manganese and iodine are found in most soils, but in some areas their absence causes nutritional problems among plants and animals. The loss of these elements through erosion, soil exhaustion and drainage makes special additions to the soils necessary.

The internal browning of cauliflower, and dry rot of sugar beets grown in Michigan, have been cured by adding boron to the soil. Cracked stems in Florida celery responded to similar treatment. The yield of field crops in Oregon is improved by the addition of sulfur, and the soil in parts of western New York needs copper.

Most of the "trace" elements known to be essential in plant growth are also of prime importance in human and animal nutrition. Thus iron, as a constituent of the respiratory pigment of hemoglobin, is necessary for the functioning of every organ and tissue in the body and plays a fundamental part as a catalyst for cellular oxidation. Its use, together with copper, in the treatment of nutritional anemia is generally known.

Some years ago in Australia, and more recently in New Zealand, "bush sickness" among sheep was directly traced to a cobalt deficiency in the soil. Manganese is concerned in the physiology of reproduction in animals. It is closely associated with calcium and phosphorus both in the areas in which it is found and in its use by the animal body. It appears, among other things, to aid in the normal functioning of nerves.

Don't wait until the doctor says...

New Research Proves

Brer Rabbit Molasses RICH in IRON

EVEN the child who gets a supposedly good diet is not necessarily safe from iron deficiency!

A number of foods in the average child's diet provide very little iron or supply it in a form that the body cannot use fully.

But now there is an easy way to give children extra amounts of this mineral. New scientific tests have proved that New Orleans molasses is second only to beef liver as a rich food source of iron. (All the tests were made with Brer Rabbit New Orleans Molasses.)

Three tablespoons of Brer Rabbit Molasses will supply about one-third of your child's total daily iron requirements.

Why not make Brer Rabbit Molasses a regular daily good habit for every child in the family?

BRER RABBIT NEW ORLEANS MOLASSES comes in two flavors to meet taste preferences—Green Label, a dark, full-flavored molasses; Gold Label, a light, mild-flavored molasses.

FREE COOK BOOK! PENICK & FORD, Ltd., Inc., New Orleans, La., Dept. H-11
Please send me Brer Rabbit's new book of over 100 ways to use molasses—in gingerbreads, cookies, cakes, breads, main dishes, desserts, puddings, ice creams, candies. Colorful, washable cover! Illustrated!

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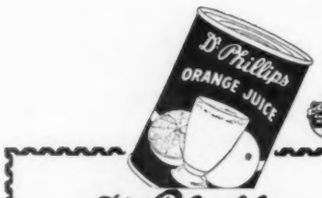

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America's Favorites

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Pocket Calorie Index
compiled by Esther Bogen Tietz, M.D. 10 cents.

AMERICAN MEDICAL ASSOCIATION
535 North Dearborn Street Chicago, Illinois

The work being done by government scientists is an effort to expand and to revaluate what is known about the nutritional significance of these factors. In the past, emphasis has been on large crops, on quantity production; the current trend toward quality production is an important step in raising the health level of the population.

Not all people are either sick or well. Even when hypochondriacs are excluded, many persons, without a diagnosed malady, are under par in energy and vitality. It is these borderline cases that will be most helped by the work being done by the Federal government. Nutritional anemia in its milder forms does not necessarily keep you home from work, but it can keep you from an effective pursuit of happiness when your energy is missing.

So with an impressive battery of analytical instruments, chemical equipment, delicate scales, microscopes, evaporators, polariscopes and the utmost patience, scientists are slowly uncovering some of the important secrets of plant growth. Seeds and seedlings are planted in sterile sand and in water cultures. Additions of the growth elements are scientifically controlled and measured. The food value of the mature plant is carefully analyzed; species of the same plant are compared. When a high type plant has been developed by such laboratory methods, it is then grown in outdoor plots under practical farming conditions.

As a result of similar procedure the effect of thiamin chloride (vitamin B_1) on plant growth was brought to light. Since its discovery, it has been the center of much excited and extravagant comment, particularly by amateur gardeners. At first it was deemed a miracle-worker which would make any garden grow by leaps and bounds. Considered opinion, however, makes it evident that, at least where plant growth is concerned, a little knowledge is a dangerous thing. Vitamin B_1 is excellent for plants struggling along in a soil deficient in this element, but a plant can use only so much. Furthermore, it cannot take the place of fertilizers.

Before modern scientific methods were perfected, the trial and error procedure was man's only means for unearthing the facts of nutrition. Experience and practical observation taught many a lesson in good nutrition before scientists were able to explain the soundness of their ideas. For instance, burned sponges were used in the thirteenth century to treat goiter. But it was 1819 before chemists discovered iodine in the ash. Today it is known that traces of iodine in man's diet help prevent goiter.

Hundreds of years before the discovery of vitamin D, cod-liver oil was used as a treatment for rickets. Pharmacists of the Middle Ages recommended lemonade for scurvy, not because they knew about vitamin C, but because from practical observation they knew it was beneficial.

Today's laboratory technic speeds up the process of discovery and makes the results obtained a matter of certainty rather than conjecture. The similarity between the digestive and growth functions in men and animals simplifies nutritional experiments, since results obtained with animals can be applied to human diets.

As a double check on their work, government scientists will feed their super-plants to test groups of animals. Records of their rates of growth, reproduction and general health will be used to evaluate the results of the experiments.

The large amount of work already done in animal nutrition points the way for these further studies. For example, it has been amply demonstrated by experiments with dairy cattle that a cow's milk is no better than the food the cow has eaten. Cows fed timothy hay with a very low vitamin A content gave milk which, while it looked nourishing enough, was sufficiently inadequate in nutritive elements to keep calves alive, even when it was fed whole. Analysis of the meat of beef cattle fed on low vitamin diets, or rations deficient in essential minerals, shows that even the juiciest looking beefsteak may not be very nourishing.

It has been estimated that the American public spends many millions of dollars a year for vitamins in the form of pills, capsules, powders and other pharmaceutical preparations. Any one who has ever used them knows that, compared with vitamins in foodstuffs, their cost is prohibitive for large sections of the population. Think, then, of the increased benefits in national health to be gained by

(Continued on page 60)

The Newer Concepts of Meat in Nutrition

Meat...

and the Protein Needs of Your Child

"How strong he has become, and look at those broad shoulders!" It warms your heart when visiting friends and relatives comment on the splendid growth of your children. It gives you a feeling of pride, particularly when you realize that not all children make the same progress.

It is not so long ago that the growth of children was largely a matter of chance, of happenstance. Today, nutritional science has learned that growth and development — provided the child is normally healthy — is largely a matter of nutrition. Merely an adequate amount of food is not enough; the child's meals must be so planned that he derives the right nutritional factors (vitamins, minerals, proteins and calories) for his needs. In several instances these needs are proportionately much greater than those of the adult.

An adequate amount of protein, for instance, is one of the important requirements for growth. In consequence, children from 2 to 5 years of age need about three times as much protein per pound of body weight as grown-ups, and children 6 to 12 years of age two and one-half times as much.

This is why meat plays such an important role in the daily dietary of children. Wise mothers know that milk, eggs, and meat are the three primary protein foods, and build the child's meals around them. They also know that the proteins of meat contain all of the ten essential amino acids needed, and approximately in the proportion required for nutrition and growth. They also know that meat has appetite appeal for children, and therefore may be an incentive for the child to eat.

The Seal of Acceptance denotes that the statements made in this advertisement are acceptable to the Council on Foods and Nutrition of the American Medical Association.

American Meat Institute

CHICAGO

EYES

(Continued from page 31)

many children graduate from elementary school with eye defects they did not have when they entered. Your child should also be tested for color blindness. This is a hereditary defect, transmitted usually by the mother to her male offspring. One boy out of 25 suffers from it as compared with one girl out of 250. Victims of color-blindness may be blind to red or green or both, but rarely can the sufferer distinguish no colors at all.

In ordinary life, defective color vision is not a serious handicap. Many color-blind people read traffic lights by their relative brightness. The choice of a future vocation is somewhat limited by this defect and perfect color vision is required in many specialized occupations such as that of a flier or a railroad engineer.

The eyes of young children are more susceptible to infection than the eyes of adults. Any child with inflamed or running eyes, swollen, sticky or red eyelids should be separated from other children and examined immediately. So-called "pink-eye" is highly contagious and the child's wash-cloth and towel must be reserved for his own exclusive use. A slightly red eye may be an inflammation of the iris instead of merely a "cold in the eye," and can result in a serious visual loss unless promptly treated. It is most unwise to use home remedies such as argyrol or neosilvol in an eye before an accurate diagnosis has been made by a qualified specialist.

Sties usually occur from improper general nourishment. They indicate a run-down physical condition that requires a rechecking of the entire health regime and a change in the child's diet. Unless attended to, this condition keeps recurring.

Nowhere is adequate protection for young eyes more important than in the classroom where children are required to do intensive visual work. Modern schools realize this and are making provisions in their physical arrangements for safeguarding the vision of their students. But parents should also investigate the conditions under which their children work in the classroom.

Lights should be properly spaced to prevent shadows and glare. The more exacting the eye-work, as in drawing and sewing classes, the more illumination is required for ease of seeing. The classroom should be equipped with double-hung window shades of buff-colored, translucent material, fastened at the center of the window for proper adjustment of light at top and bottom. Adjustable tilt-top desks help to bring work to the proper angle of vision. The

RECENTLY ACCEPTED FOODS

The American Medical Association's Council on Foods and Nutrition has accepted the following additional foods as conforming to the rules of the Council for description in the book "Accepted Foods and Their Nutritional Significance."

Several brands of strained vegetables and other preparations useful for the feeding of infants or for special diets for older children or adults.

Happy Home Strained Vegetables with Beef and Liver Concentrates, a canned, strained mixture of carrots, potatoes, tomatoes, peas, celery, spinach, soya bean, beef extract and liver extract.

Heinz Strained Tomato Soup, a canned condensed strained cooked mixture of tomatoes, carrots, potatoes, celery, sucrose, rice, soya bean flour, dried whey and sodium chloride.

Jack Sprat Strained Vegetables with Beef and Liver Concentrates, a canned, strained mixture of carrots, potatoes, tomatoes, peas, celery, spinach, soya bean, beef extract and liver extract.

Red & White Strained Vegetables with Beef and Liver Concentrates, a canned, strained mixture of carrots, potatoes, tomatoes, peas, celery, spinach, soya bean, beef extract and liver extract.

A brand of refined white sugar manufactured from the sugar beet. Chemically there is no difference between cane and beet sugars.

Union Sugar, granulated beet sugar.

A dried apple product which may be used to add variety to breakfast cereals and salads. Tests show that this product complies with Council requirements for freedom from toxic spray residues.

Appella Apple Crisps, dried granules of steamed, cored, peeled apples.

Two kinds of peanut butter, a spread for sandwiches. Whole, roasted peanuts contain vitamin B_1 in considerable quantities. It is assumed that peanut butter also would contribute significant amounts of this vitamin to the diet.

Skippy Peanut Butter Chunk Style, regular peanut butter to which one-eighth inch particles of roasted peanuts have been added, sugar and sodium chloride.

Skippy Peanut Butter Creamy Style, ground peanuts, the oil of which has been extracted, hydrogenated and then mixed with the ground peanuts, sugar and sodium chloride.

Two brands of grape juice which are refreshing and provide variety to the diet. While preserved orange, grapefruit, lemon, pineapple and tomato juices are excellent sources of vitamin C, grape juice contains no vitamin C. This type of juice, however, provides an appreciable means, especially for the invalid, of taking needed fluids. Tests of lead and arsenic show that the product complies with Council requirements for freedom from toxic spray residues.

Freedom Grape Juice Unsweetened, bottled pasteurized grape juice prepared from Concord grapes.

Taft's Grape Juice Unsweetened, bottled pasteurized grape juice prepared from Concord grapes.

A brand of baking soda known chemically as sodium bicarbonate.

Dial Baking Soda, conforming to the United States Pharmacopeia standards for pure sodium bicarbonate.

seating arrangement should be such that students never face a bright window or work in their own shadows. The teacher's desk ought not to be placed near a window for this requires that pupils stare at a glare, reducing their ability to see and causing eye fatigue.

Glass covered pictures on the walls, shiny blackboards and desk or table tops, all constitute a hazard to eyes. Pictures can be covered with a flat varnish instead of glass. This preserves them and at the same time eliminates glare. The blackboard and desk surfaces should all be dull. Since dark surfaces absorb much light which might be reflected to the desk tops, blackboards not in use should be covered with curtains. Charts, maps and blackboards should never be placed between windows because of the sharp contrast between indoor and outdoor lighting.

Objects hung on the schoolroom walls should always be placed at the students' eye level to avoid strain. Textbooks should be printed in reasonable sized type on dull paper.

For children with serious visual handicaps, the modern sight-saving class is frequently advisable. Here oral instruction is emphasized through the use of such mechanical devices as the radio and phonograph. Books are printed in larger type and lessons are individualized in accordance with each student's visual capacity. Physical arrangements include special illumination, controlled in some instances by the photo-electric cell, a dull finish on walls and paper, adjustable desks and seats, typewriters for all written work and maps and globes without detail.

Children who are failing in ordinary school classes because of defective vision, often satisfactorily complete the necessary work for promotion under the distinct advantages provided by the sight-saving class. Only an individual examination by a competent ophthalmologist can determine definitely whether any particular child is in need of such aid. In general, however, when vision in the better eye even after correction is still far below normal, or when a child suffers from progressive eye difficulties, a sight-saving class should be considered. Give your child the advantage of winning all his battles in life with *both* eyes.

WHAT HAPPENS WHEN

BREAD IS TOASTED?

First choose your bread. Seek out light-crusted white bread, made with liberal amounts of milk solids, shortening and sugar, as well as the usual quantities of wheat flour, yeast, salt, malt extract and water.

Be sure milk in some form has been included. This is not difficult, for today the average white loaf of baker's bread contains approximately six per cent of milk solids. These increase the nutritive properties of bread, adding valuable milk proteins, lactose, minerals, and small amounts of vitamin B_1 (thiamin) and vitamin B_2 (riboflavin).

When such bread is toasted, advantageous changes occur. The carbohydrate of the bread is largely converted into simple carbohydrates called dextrins, and into soluble starch.

Dextrins and soluble starch together provide one of the most digestible forms of carbohydrate for the food-energy needed by the body.

Dextrins, with milk sugar (lactose) promote good intestinal hygiene by encouraging the growth of beneficial organisms.

Toasting seems to change advantageously the proteins of bread. Persons mildly sensitive to wheat often have no difficulty with good toast.

And toast from bread rich in milk solids is a fair source of calcium, necessary for growth, vitality, and the building of strong bones and teeth.

Best of all, toast is not fattening in a well-balanced daily diet. It may be included, in reasonable amounts, in sensible reducing diets, since the carbohydrate it provides aids in the proper burning of body fat.

The above facts are based upon a popular article on "Toast" by Dr. James A. Tobey in the November, 1940, issue of Hygeia. For a complete reprint of this article, send the coupon below.

American Institute of Baking

DEPARTMENT OF NUTRITION

NINE ROCKEFELLER PLAZA NEW YORK, N. Y.

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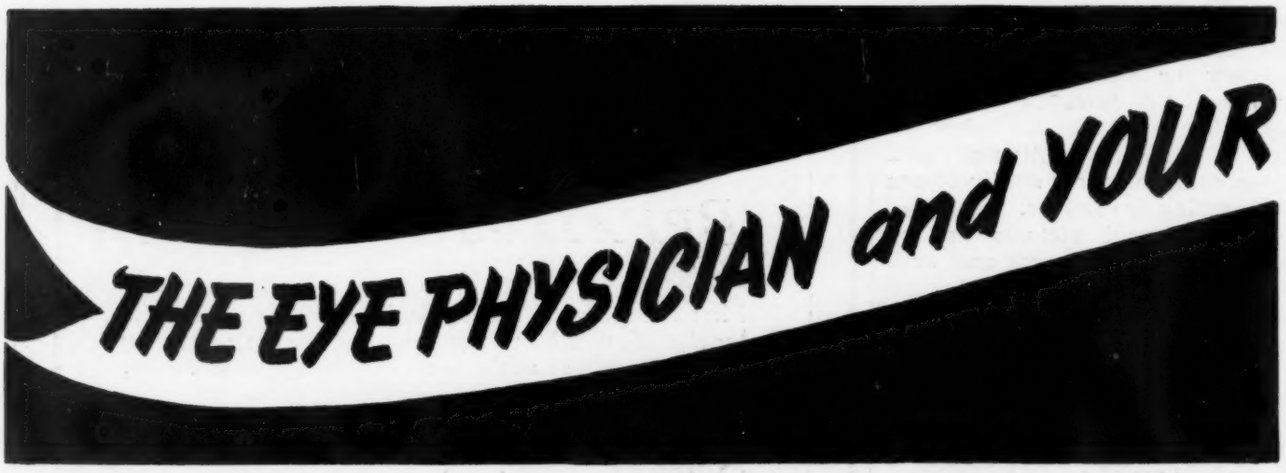

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FREE **. . . this authoritative booklet on care of children's eyes will be sent free on request . . . every Mother and Father should read it.**

QUESTIONS AND *Answers*

Mental Hygiene

To the Editor:—Is there any definite treatment for involutional melancholia?

M. F., New York.

Answer.—Involutional melancholia occurs in later life, principally in women, although not infrequently in men. A typical case presents depression with much anxiety, often accompanied by agitated restlessness. This state usually occurs between the ages of 50 and 60, although occasionally it may be found in the late forties. This disturbance is, of course, related to the physiologic changes occurring at this period of life. Some investigators are engaged in the problem of whether some glandular disturbance may not be responsible, or at least play an important part. This research is still in the experimental stage and no conclusions are possible at this time.

In the past two or three years metrazol convulsive shock therapy has been successful in many instances. Some reports in carefully selected cases ranging as high as 60 to 75 per cent of recoveries, or marked improvements were obtained. At present this is the preferred treatment for this condition, provided the patient is in good physical health and the heart action is normal as demonstrated by clinical examination.

Muscle Development

To the Editor:—What gives the greatest development to a muscle—exercising to the first sign of fatigue; to very great fatigue; or to some point between these two?

H. L., New York.

Answer.—This is a hard question to answer because of the difficulty of arriving at precise definitions of the terms used. "Greatest development to a muscle" may mean: (1) greatest size of that muscle, (2) greatest strength of that muscle, or (3) greatest degree of skill in the use of that muscle. These factors vary considerably depending on the exact muscle used. We assume that the third category (which is primarily a phenomenon associated with the nervous system and the precise control of the muscle) is not meant, leaving the first two to be considered. A combination of the first two factors leaves us with a number of different possibilities, due to the fact that the answers would be quite different if any of a number of different muscles were used, such as the leg muscles or the arm muscles. Therefore, we must understand exactly what is meant by "fatigue."

Actual fatigue of the muscle in the physiological sense rarely if ever occurs in the body. Fatigue, as usually felt, is a combination of several factors and is primarily concerned with the brain. When we have repeatedly performed voluntarily some such movement as lifting a weight with one finger to the point where we are no longer able to move the weight because of "fatigue," it is still possible for the given finger muscles to contract and lift the weight if the peripheral nerve going to the muscles, or the muscles themselves, are directly stimulated. When large groups of muscles are involved in strenuous activity, such as in running or swimming, fatigue results largely through the inability of the circulatory system to provide an adequate oxygen supply to the body, though there may also be some unpleasant sensations arriving from the muscles and joints themselves contributing to this sense of fatigue. The limit of endurance, however, in such vigorous activity is set by the limits of the circulatory system and the heart in their adjustments to the increased demands for oxygen by the active muscles and the necessity of removing such by-products of the activity as carbon dioxide and lactic acid.

Careful studies show that when exercised muscles increase in size it is accomplished by an increase in thickness of the various individual fibers that make up the muscle rather than by any great increase in the number of fibers in the muscle. Furthermore, increases in the girth of a muscle in consequence of its use is not always proportional to the work done. Thus it has been shown that exercise has less effect on muscle growth during periods of rapid growth in height of the person than in periods when a growth in diameter predominates. Also, thin persons respond least, whereas middle sized persons tend to show the greatest improvement in muscle girth as a result of exercise. A study of Olympic athletes has shown that there is greatest strength in those muscle groups employed most strenuously by the athlete in performing his specialty. However, relatively continuous activity is necessary in order to keep muscles at a high point of strength, endurance and performance.

Careful studies have shown that moderate exercise leads to a steady state in muscles, and no matter how often the exercise is repeated there is no further increase in size of the muscles. Thus, increase in muscle size or hypertrophy of the muscle spindles is a function of the amount of work performed in a unit time carried on over a period of time.

The difficulty arises in determining when the point of fatigue is reached and how long the activity can be continued until extreme fatigue stops the action. This is a nervous and not strictly a muscular phenomenon and we must take into consideration the mental factors involved.

The more vigorous the muscular activity and the more times it is repeated, the more likely one is to obtain an increase in size and strength of the muscles; however, a practical limit is placed on the amount of exercise by the physiologic and psychologic factors of fatigue. The best results will probably be attained by exercising as strenuously and regularly (repeatedly) as possible without carrying on to the point of definite unpleasantness.

Fear of the Dark

To the Editor:—I have a friend who is not able to sleep in a room by herself. She seems unafraid of any particular thing, but is afraid of being alone in the dark. She has been told that if she made up her mind to sleep in a room by herself and not be afraid she could do it. But she believes it is both a physical and mental phobia. She thinks it would be just as easy for a ticklish person to make up their mind not to be ticklish, as it would be for her to make up her mind, and then be over her phobia. Is there any comparison in these two arguments? Are they both mental and physical, or are they different entirely?

L. T., Texas.

Answer.—Fears of the type described in your letter are invariably the result of an early experience which at the time was associated with the emotion fear. The experience, because of its unpleasant or perhaps painful nature has been relegated to that part of the mind known as the unconscious, and is spoken of as having been forgotten. The emotion, however, attached to such an experience continues to struggle for expression and may manifest itself in many different ways, affecting not only the person's feelings but also, not infrequently, his conduct as well. While the memory of the primary experience remains lodged in the unconscious, the person is helpless, anxious as he may be to control the emotion of fear. These fears are not constant but are awakened by varied experiences that occur during routine activities. The person may or may not believe his conduct to be affected by such fears. Therefore, the fear as described bears no relation to those tactile sensations to which the ticklish person is unduly sensitive.

Vision Charts

To the Editor:—What new material has been developed in vision testing charts? Which is the best chart for all grade use in rural schools?

E. D., California.

Answer.—The most satisfactory chart for making a visual survey of school children is still the standard Snellen Chart. This can be

DEAR and gentle reader, how *can* we make you realize the difference to you when you use Tampax? Doesn't it mean something to tell you that over two hundred thirty million have already been sold? Doesn't *that* give you assurance? There is an old saying "What others can do, *you* can do." Just give Tampax a real trial.

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obtained from any of the major optical companies or from the headquarters of the American Medical Association. A joint Committee of the Student Health Association and the National Society for the Prevention of Blindness has recently developed a new chart holder with standard illumination and complete instructions for the conduct of a visual survey. Details of this may be obtained from the National Society for the Prevention of Blindness headquarters, 50 W. 50th St., New York City.

While attempts have been made to substitute stereoscopic apparatus, the Snellen Chart remains the most satisfactory method for testing eyes.

Predetermination of Sex

To the Editor:—At what stage in the development of the human embryo may the sex be determined by means of x-ray?

S. B., New York.

Answer.—Determination of sex by x-ray studies is not possible until the human embryo has attained considerable size, possibly from the seventh month on. Even then it is only possible under certain very peculiar circumstances which can be provided when there is sufficient need for it.

Certain fluids may be injected into the uterine cavity where they mix with the amniotic fluid, making it opaque to the x-rays. This greatly intensifies the clearness with which the profile of the child can be seen with the x-ray, permitting delineation of the entire outline of the child's body. In occasional cases the protrusion of the male external genital organs beyond the normal outline of the buttocks permits one to recognize the sex. Unless the parts are shown in exact profile, no statement can be made regarding the sex.

This is a method which must be done under careful surgical precautions and even then it is attended by some danger. It is not in general use.

One investigator, about twenty-five years ago, suggested that the difference in time of development of the centers of ossification in the male and female skeleton during intrauterine life might serve as a basis for predicting the sex of the unborn child. With especially good x-ray technic, it is sometimes possible to obtain very satisfactory detail in the bones of the unborn child's wrist and ankle. It is occasionally helpful, though not definitely dependable, to carefully count the wrist or ankle bones which are developed. Girls exhibit more advanced development of these bones than do boys throughout intrauterine life.

It is apparent that there is no dependable routine x-ray method for predicting the sex of the unborn child.

Vitamin A and the Thyroid

To the Editor:—Is there any foundation to the supposed antagonism between vitamin A and the thyroid? Rather, is their antagonism ever used in recognized medical treatment?

G. P., Illinois.

Answer.—There is probably no real antagonism between vitamin A and thyroid. Vitamin A is made in the body from materials in the diet and this manufacture is probably carried out in the liver. The liver is susceptible to the influence of the thyroid secretions and when the thyroid is over-active, the liver suffers definite damage. The manufacture of vitamin A and other features of this metabolism may definitely suffer in cases of thyroid disease. As a consequence of this, there will be other difficulties for the body secondary to the vitamin A deficiency created by the thyroid disease. In the treatment of patients with excessive thyroid activity, it is, therefore, often advisable to use extra amounts of vitamin A during the preparation for operation and even after operation until health has been regained.

Pituitary Gland

To the Editor:—What does the pituitary gland have to do with heredity?

S. F., New York.

Answer.—The pituitary gland is not related to heredity any more than other parts of the body. Since the pituitary gland is the structure which provides secretion for stimulating growth and development as well as maintaining certain of the important mechanisms throughout adult life, pituitary influences are affected by heredity. Probably ten-

dency to short or great stature, to early or late maturity, to large or small size, etc., are inherited types of pituitary underactivity, normal activity or increased activity. This is only one specialized type of inheritance which is expressed throughout life.

Food Superstitions

To the Editor:—Are eggs detrimental to health? How does the metal that wears off a knife blade affect health? Is it harmful to eat fruit and milk at the same meal?

B. B. S., Washington.

Answer.—Both egg white and egg yolk are wholesome foods. The proximate composition of egg white and egg yolk is as follows:

	Egg White	Egg Yolk
Water	88%	49%
Protein	11%	16%
Fat	0%	32%
Ash	1%	2%

It will be noted that egg white is chiefly a protein food while egg yolk provides some fat as well as more protein and minerals than egg white. All the vitamin A provided by a whole egg is in the yolk. Egg yolk is also a more concentrated food than egg white. For example, 100 grams (an egg weighs about 60 grams) of egg white provide 46 calories while 100 grams of egg yolk provide 355 calories.

Both egg white and egg yolk should be included in the diet each day. Nutritionists recommend at least one egg each day.

The minute quantities of metal that might come off a knife blade and be incorporated in food are negligible.

Fruit and milk may be eaten together. Even fruits that taste acid, like orange or grapefruit, may be eaten with milk at the same meal. There is no reason why fruit and milk should not be eaten together. The first step in the digestion of milk is the curdling of milk by the acid normally present in the digestive juices of the stomach.

If you have a question relating to health, write to "Questions and Answers," HYGEIA, enclosing a three-cent stamp. Questions are submitted to recognized authorities in the several branches of medicine. Diagnoses in individual cases are not attempted nor is treatment prescribed. Anonymous letters are ignored.

ACCIDENTS WILL HAPPEN

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IN THE well run household safeguards against emergencies will always be at hand —for accidents are bound to happen.

One product that is of great importance to have in the medicine cabinet for first aid in time of need, is Bicarbonate of Soda—Arm & Hammer or Cow Brand.

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In the Hospital

COTTON is

UP AND DOWN corridors—in and out of offices, laboratories, waiting rooms and kitchens—the women in white are constantly on the march.

Because nurses, dietitians and laboratory technicians are on their feet so much they need comfortable stockings that are extra sturdy. And, being women to whom a trim appearance is a professional asset, they want stockings that look attractive as well.

Cotton has long been a favored fiber for making stockings for nurses. One of the chief reasons is that full-bleached cotton stockings need no special attention in the laundry. They may be washed time after time and still keep their "hospital" whiteness. If necessary, they can be sterilized to rid them of infectious bacteria without injuring the fiber.

Put on the market recently in many stores from coast to coast is a new type of cotton stocking for nurses and other women who wear white uniforms on duty. This stocking, known as Government Style 112, was designed in the Bureau of Home Economics of the United States Department of Agriculture.

Government Style 112 is knit of full-bleached, fine lisle yarn, spun from long-staple cotton, which has been combed, mercerized and gassed to remove fuzz. It fits the leg trimly, because it is full-fashinoed. Unlike the old type of shapeless, circular-knit, cotton stockings, these new hose are made on the same type of machines used for silk stockings.

Besides the features of the stocking that make for attractive appearance, Government Style 112 has much to recommend it in the line of comfort and endurance.

There's plenty of knee room in this stocking, thanks to the full-fashioned method of knitting. For additional comfort there is a stretch top so that the stocking will not bind above the knees. There is also a double run stop at the top of this stocking, specially ventilated toes and heel, and three choices of length.

One of the best things about Government Style 112 is that it can be counted on to wear well. It has been specially reinforced at "strategic" points on the foot. The location of these strategic points was determined by a special study in which the stockings were actually worn by nurses on duty.

For over a year, 68 student nurses in a Washington, D. C. hospital cooperated with the Bureau of Home Economics in making a "wear study" of cotton stockings. They wore four different styles of full-fashioned hosiery designed by a technician in the Bureau.

These stockings were worn continuously while the nurses were on duty. Every day Bureau members checked the stockings. They mended them when necessary, and sent in replacements. Then they kept records of the kind and the location of the breaks in the stocking, and the time of wear before each pair had to be thrown away.

From these records, from comments of the nurses, and from data gathered in the laboratory tests, Government Style 112 was made up. This style incorporates the most satisfactory features of the four

KING

By ELMA EDWARDS

different stockings tested in the wear study.

The weight of the stocking is a happy medium between the sheer cotton the nurses liked for looks and the coarser knit that proved most durable. Reinforcements on the feet are placed at points where the records revealed there was the most wear and strain.

Nurses who helped with the study made numerous favorable comments about the full-fashioned cotton stockings. They praised the comfort and coolness of the cotton, the way the hose fit, the way they absorbed perspiration quickly, their durability and resistance to snagging.

Government Style 112 is but one of the stockings designed by the Bureau of Home Economics. At the request of the Congress of the United States that Bureau has been doing research on all types of cotton hose in order to find ways of stimulating the use of American cotton.

Over 80 designs for good-looking, full-fashioned cotton hose have been made up at the Bureau and released to the trade. A number of these designs are being manufactured and sold. According to reports to the Bureau, from manufacturers, Government Style 112 is being retailed at 79 cents a pair or less.

The other cotton hosiery designs range from plain knits for service to sheer hose for evening wear. Some of the most attractive designs are the novelty weaves for sports wear. One style of interest to elderly persons and invalids sensitive to dyestuff is a special stocking with white feet.

U. S. Bureau of Home Economics

These new cotton stockings have many advantages, but primarily they are attractive, durable, comfortable and may be sterilized.

WHY OTHER PEOPLE SMELL

(*Continued from page 14*)

tion of the sinuses may—depending upon the bacteria present—give its odor to the breath. All of these conditions are local. But in their treatment there is no first aid of home hygiene. Your doctor and your dentist are the only hope for you and for the world at large.

The same principles that apply to mouth odors apply to those that come from the skin. On the skin the retained putrefiable material comes from sweat and the secretion of the grease glands about the hairs. The greater the accumulation, the greater the probability of odor. But, as in the mouth, the presence of material that can putrefy or turn rancid does not signify that it will do so at once. The right sort of bacteria must be present and in sufficient numbers. And here there are apparently wide individual variations. Some fortunate people sweat profusely, seldom bathe, and rarely smell; others sweat little, bathe frequently, and smell within an hour.

If odor is to develop, the conditions on the skin must be favorable for the growth of bacteria. They do not thrive on skin that is freely exposed to sun and air—the face and the scalp. They thrive in moist, sheltered places—the feet enclosed in shoes, the groin, and the armpit.

The control of body odor is first the bath, but here a word of caution. The normal grease always, but particularly after 40, is necessary to the skin. Too much soap and water may irritate the skin. There is no limit, however, to washing the clothing. Underclothing and socks absorb sweat and hold bacteria; they also absorb the odoriferous substances from the skin. Change once a day, twice if necessary. The laundry bill will swell but the odor will diminish.

For an unfortunate few, the well-scrubbed skin and immaculate clothing do not completely control body odor. There is a variety of home remedies to which they can turn. Of these, perfume, which partially masks the odor, is the oldest and least successful. One degree better are the scented soaps and bath salts; they assure, not only perfume, but a bath as well. And as to flavor: ladies incline toward the flowers and men toward a hardier scent, especially that of carbolic acid. Carbolic acid does not destroy odors but its smell is firmly associated in our minds with cleanliness—as witness the public toilets where, to take the place of immaculateness, creosote is dripped to give the masking odor of cleanliness. Many a man deals with body odors on the same principle.

As with the mouth, it is impossible to completely rid the skin of bacteria by any antiseptic that may be safely and repeatedly used. Some control of bacterial action, and with it a delay in development of odor, is obtained with benzoated greases. The benzoate may delay rancidity on the skin just as it delays the spoiling of canned goods.

There are safe and unsafe lotions for lessening local perspiration. And there are good and inexpensive dusting powders that, for a few hours, will absorb sweat. But there are also some unfortunate individuals who, in spite of baths and ointments, lotions and powders, continue to smell. For them, home remedies fail; they must take their sodden feet to the dermatologist.

SUPER VEGETABLES for HEALTH

(*Continued from page 48*)

making quality meats and vegetables available for general consumption.

Most nutritional anemia caused by eating food grown in poor soils occurs among the low-income groups of the rural population, especially in the South. Where purchasing power is inadequate, families are compelled to live on home-grown produce. If the soil is deficient in necessary elements, so are the plants and animals raised in that area.

The simplest solution of the problem is to add these lacking elements to the soil, over and above the common types of fertilizers. When the work of the government scientists is completed, it will be known which elements are lacking in a given area. These minerals can then be added with the normal fertilizers.

Of course, many factors other than soil composition can effect the growth and food value of plants: climate, moisture, pruning and spraying practices, the amount and nature of light received during the growth period, time of harvest and method of storage—all play a part in determining food quality.

The inter-relationships among these various factors are so complex that it is only by the most careful investigation that their effects can be studied separately. It is known that early cut hay is more palatable, digestible and nutritious than late cut hay. Protein content decreases and crude fiber increases with maturity. No matter how fine the hay is when cut, however, prolonged exposure to sunlight in the field will reduce the vitamin A content considerably. Yet sunlight during the growth period is of prime importance to a good crop.

Such problems as these make the work being done at Beltsville, at Ithaca and in numerous state agricultural experiment stations more than just a gigantic soil survey. With the wealth of knowledge and abundance of scientific materials at their disposal, these scientists will evolve practical means for raising the quality of the food we eat.

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BOOKS ON HEALTH

Sounds the Letters Make

By Lucille D. Schoolfield and Josephine B. Timberlake. Cloth. Price, $1.00. Boston: Little, Brown and Company, 1940.

The two authors are unusually well qualified to produce a book of this type. It is a unique alphabet book for children. By means of rhymes and pictures it teaches not only the letters themselves but also the various sounds that each letter produces. Thus the child is able to associate more easily the letters and their sounds which makes for easier learning.

PAUL A. TESCHNER, M.D.

The Physical Education Curriculum

By William Ralph Laporte. Paper. Price, $1. Pp. 86. Los Angeles: University of Southern California Press, 1938.

This monograph outlines in detail an admittedly idealistic national program for physical education. In certain schools some of the ideals have been approximated, but there is a long way to go before there will be a universal realization or even an approach to the standards set forth in this monograph. Most of the space is devoted to an evaluation of physical activities and to discussions of facilities and programs. The physical educator is mentioned as the most common choice for instruction in health education, but the statement also appears that health education should be allotted to the best qualified personnel regardless of departmental affiliations. The manual uses a hyphenated term, "physical-medical examination," but it does not appear just why this rather unusual hyphenated term is employed. A possible explanation is the fact that physical examinations in the sense of posture and muscular tests, and the nonmedical evaluation of bodily condition are frequently made by physical education personnel. The manual devotes considerable space to corrective activities and restricted games and gives an extensive bibliography. There is an appendix of health and physical education score cards for evaluating procedures and scoring them on a numerical basis. Such scoring, like all self appraisal, is obviously dependent largely upon the objectivity which the self appraiser is able to achieve.

W. W. BAUER, M.D.

Your Allergy and What to Do About It

By June B. Cohen and Milton B. Cohen, M.D. Cloth. Price, $1.50. Pp. 177. Illustrated. Philadelphia: J. B. Lippincott Company, 1940.

This book, written by a nationally known allergist and a patient, his daughter, is a thorough piece of work which will give the intelligent reader an excellent understanding of the field of allergy. It requires interest in this subject to read the book completely, in spite of the fact that its style is interesting and thoroughly enjoyable, without the "heaviness" of the formal medical textbook in allergy. It is so full of relevant information that thoughtful reading is required. This the authors have recognized by including an excellent glossary for the definition of terms at the end of the volume which obviates redundant definitions in the text. The volume is divided into eleven chapters. The first four chapters, covering 80 pages, deals with the general principles of allergy as indicated by the titles: What is allergy? How symptoms are produced. Life history of the allergic individual. How allergy disturbs health. These 80 pages are worth the price of the book. In the description of the life history of a typical allergic child from infancy to adulthood with explanations for the changes in the symptoms from abdominal disturbances to eczema to hay fever and asthma, the authors do not neglect the effect of the allergy on the general health of the patient. It is the most clarifying chapter in the book. The other seven chapters deal with specific common allergic conditions, such as hay fever, asthma and hives. These chapters are likewise well written with the eye on the lay reader, giving him what he needs: understanding, rather than specific directions for the care of the condition. The authors avoid the attempts at levity which are characteristic of some of the volumes written on allergy for lay consumption. Each chapter, however, is headed by an excellent and amusing pen and ink drawing by Robert S. Robison. While this book is intended for the laity, it could be read with much

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"Ralph is allergic to police dogs."

profit by the general practitioner who desires a comprehensive understanding of allergy in relation to general medicine.

BEN Z. RAPPAPORT, M.D.

An Adopted Child Looks at Adoption

By Carol S. Prentice. Cloth. Price, $2.00. Pp. 222. New York: D. Appleton-Century Co., 1940.

This is a good book on an important subject. A flood of popular articles, some sensible, others glamorous; revelations of bootlegging traffic in babies; overpublicizing of adoptions by motion picture stars; newspaper stories to the effect that orphans with feebleminded I.Q.s can be made normal by improved environment; radio and journal accounts of the plight of countless refugee children—all have served to make the public adoption conscious and confused. Child adoption is one of the most complicated undertakings which any person or pair of persons can assume. It has almost as many unpredictables, difficulties and rewards as marriage itself. This is natural, for it represents an effort to realize the consummation of marriage.

A balanced discussion of such a many sided subject needs a many sided outlook. The author of this brief volume of 222 pages should surely qualify as an expert. She was herself an adopted child. When adopted she was old enough to remember her true mother; she had two foster mothers; she grew up in a home which itself carried on adoption work; she became a lawyer and investigated adoption legislation and practices. As a mother of two children, she adopted another child, and she has been a keen observer of experiments in adoption in other homes. About all these experiences she writes with informal candor and concreteness. Part of the book is almost autobiographical, but the whole purpose is to illumine the psychologic issues and pitfalls of child adoption and to point to the necessity of combatting unguided impulse and sentimentality. The author might have devoted more attention to the happy outcome of numerous adoptions, but generally it is best for prospective adoptive parents to heed her appeal to character, faith, unselfishness, and tolerant understanding.

There are 21 short, readable chapters, dealing with such realistic subjects as "the fairy tale approach," "fits and misfits," "motives for adoption," "heredity and environment," "spinsters as parents," "babies for sale," "the right home for the right child." For the most part Mrs. Prentice converses and reasons with her readers. The book does not preach excessively. Here and there the text may be too disturbing, but since adoption takes courage, we can recommend this book to would-be adoptive parents who wish to get oriented in their fine adventure. Let them read the concise manual of only 5 pages at the end of the book. Let them thrice read the following precautions:

"Avoid maternity homes and substandard nurseries."

"Whether required by law or not, a period of probation should be insisted upon by agencies and adopting parents themselves."

ARNOLD GESELL, M.D.

Let's Talk About Your Baby

By H. Kent Tenney, Jr., M.D., F.A.A.P. Cloth. Price, $1.00. Pp. 115. Illustrated. Minneapolis: University of Minnesota Press, 1940.

Written in the conversational manner, this book leaves one in high spirits for days. Each chapter is introduced by the baby and taken over by the doctor on the occasion of their visits throughout baby's first year. The doctor speaks of furniture, clothing, feeding, training, health, etc., always warning mother just how to keep one step ahead of baby. The author puts the mother at ease by his discussion of such things as hiccoughs, spitting-up and crying which frequently worry her. Each page is packed with just the right amount of information and sound common-sense advice. Young mothers will welcome this book.

BARBARA FISHBEIN FRIEDELL.

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University of Minnesota Press, 100 Westbrook Hall, Minneapolis, Minn.

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The Gift a King Accepts.—15 characters. Set of 15 copies, $1.10. Single copies, 10 cents each.

The Friendly Brushes.—11 characters. Set of 11 copies, 50 cents. Single copies, 10 cents each.

The Magic Fluid (Diphtheria Antitoxin).—8 characters, with chorus, "king's subjects," etc. Set of 8 copies, 35 cents. Single copies, 10 cents each.

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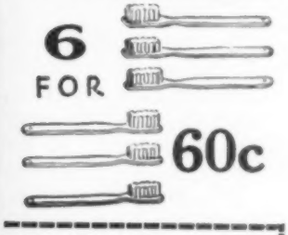

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If your drug or toilet goods counter cannot supply you with Takamines, send 60c to us for INTRODUCTORY package of 6 Standard Takamine Toothbrushes.
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PNEUMONIA

(*Continued from page 11*)

which drugs do not effect a prompt cure, serum should be used. Serum should not be used in those who are sensitive to it, and it cannot be used unless the invading organism is known.

Specific therapy with drugs, or with serum, requires expert observation and professional skill not only in selection and observation but also for the early recognition of complications which may occur and which may prevent the action of these agents. Collections of pus in the pleura, or elsewhere, must be detected early and, if living pneumococci are present, emptied by incision.

Over and above the use of specific remedies which depress the pneumococcus and augment the resistance of the patient, the modern treatment of pneumonia includes the more extensive and early use of oxygen by more effective methods. During pneumonia, especially during the period of fever, there is an increased need for oxygen because of the increased fever. Metabolism rises sharply, increasing 7.5 per cent of the basal for each degree of temperature Fahrenheit. Besides the increased demand for oxygen, there is a diminished area from which oxygen may be absorbed in the lungs. In order for sufficient oxygen to pass into the blood stream through the remaining useful portion of lung, the gradient or drop in the pressure of oxygen in the air to the pressure of oxygen in the blood must be increased. This is done by increasing the concentration of the oxygen in the air, from the normal 20 per cent to 40 or 60 per cent, and sometimes to an even greater concentration. There is no provision for the storage of oxygen in the body. If patients do not oxygenate their blood, they suffer from its lack and have symptoms. If there is a great oxygen want, the more sensitive nerve cells are damaged and death occurs. Oxygen must be continuously and adequately supplied.

The modern treatment of pneumonia has been advanced by the development of appliances for the continuous and cheap use of oxygen. It is separated from liquid air and stored in commercial cylinders: There is no "medical" oxygen. Accurate and safe regulators have been perfected so that both the amount of oxygen administered each minute and the amount remaining in the cylinder may be readily observed. Oxygen may be administered directly to the patient by tubes, entering either the pharynx, or the nostrils, or by masks. Besides the direct administration of oxygen to the respiratory passages, the patient may be surrounded by suitable oxygen atmospheres in a tent or room. Because tents or chambers confine the heat elaborated by the patient, it is necessary to attach to such enclosures a suitably designed air-conditioning unit. Infants may be given oxygen in boxes, but the boxes must be protected from air currents.

Other improvements in the care of pneumonia patients are based on a knowledge of the changes which occur in infections, and as the result of fever. Patients are fed instead of being starved; the deficit of salt from sweating, or vomiting, is restored so that the tissues are normally swollen. Alcohol which was formerly considered a necessity is no longer forced. There is more discriminate use of sedatives. Hospital beds and skilled nursing reduce exertion for patients who are critically ill.

No method of treatment, unless it can be applied generally and shows a definite dent in the mortality rate, can be called successful or better than the one which preceded it.

If we consider the deaths from pneumonia in the City of New York, where accurate records have been kept for more than a century, we find some facts which suggest that the modern treatment of pneumonia is reducing the death rate. In 1909 pneumonia caused 10,164 deaths in the city which then had 4,759,000 persons, a rate of 219 per 100,000 population. The number of deaths continued to range from 7,250 to about 11,000 until 1927, while the population had increased by almost a million. Before 1917 there were rarely fewer than 11,000 pneumonia deaths a year. In 1918, the year of the influenza epidemic, there were 20,628 deaths. Since that year, until 1933, with the exception of the single year 1921 with 6,477 deaths, there were never fewer than 7,600 deaths from pneumonia. The rate for the population gradually declined from 219 per 100,000 in 1904 to 107.3 in 1933, when the population was almost seven million. The year 1934 was the first in which the deaths were less than 7,000 and the rate less than 100 per 100,000, namely, 6,755 deaths and 93.5 rate respectively. At this time, serum treatment was being more widely used and continuous oxygen treatment with tents was made popular. In 1937 the rate was still 87.5 and the deaths 6,500 a year. That year New York City began to distribute serum to the needy: the rate fell to 63.2 and the number of deaths to 4,737. That also was the year that rabbit serum was introduced, and the next year the new sulfanilamide drugs were released. For the year 1939 the deaths were 4,235. Most of the deaths from pneumonia occur in the first six months of the year. For the eight years prior to 1938, before the intensive education under a Director of Pneumonia Control, the death rates for the first half year varied from 4,065 to 6,549. In 1938 they were 3,034, in 1939, 2,962 and in 1940, 2,187. Without doubt, a new level for pneumonia mortality has been reached.

Before 1921 the hospital death rate from pneumonias in children under 2 years was appalling: one third of the children died. At present, when specific treatment is employed, only one in ten of this age group succumb, even in crowded hospitals. The child death rate from the contagious diseases has also fallen because most of these deaths are due to complicating pneumonia, which often yields to specific therapy.

More potent and less toxic new drugs are being produced and studied. Knowledge of bacterial and human physiology is being augmented and applied. Medicine is gratified by its accomplishment with the modern treatment of pneumonia, but not complacent with the death rate which physicians ever strive to reduce still further.

Doctors at Work!

Continuing with the dramatic medical series, DOCTORS AT WORK, the AMERICAN MEDICAL ASSOCIATION and the NATIONAL BROADCASTING COMPANY present the story of Tommy Riggs, a young American physician. Broadcasts are at 10:30 E.S.T. each Wednesday evening (one hour earlier C.S.T.; two hours earlier M.S.T.; three hours earlier P.S.T.).

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.....what doctors can do for noses that fail to work and ears that decline to hear.

January 8: YOUR EYES

.....nearsightedness, farsightedness, glasses, and how you and your doctor can save your eyes.

January 15: BEST FOOT FORWARD

.....if your back aches, maybe your feet are to blame and if your feet are killing you, perhaps it's your tonsils.

January 22: BLOCKING PAIN

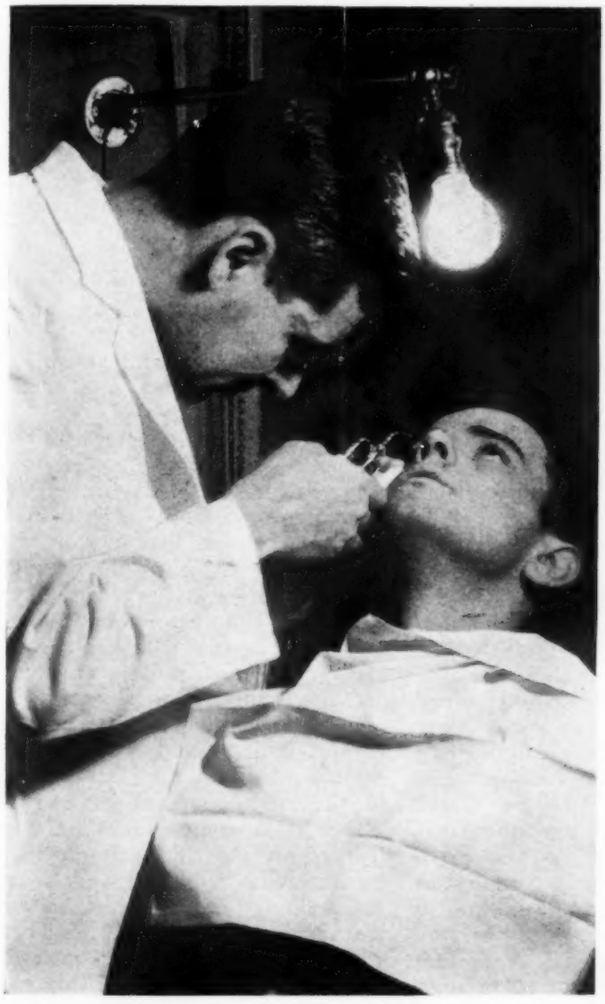
.....the story of anesthesia, the merciful sleep which makes surgery possible and childbirth easier.

January 29: DEEPER THAN IT LOOKS

.....a story touching on the skin and its retouching.

Some radio stations, owing to program conflicts, transcribe DOCTORS AT WORK and rebroadcast it at an hour differing from the network schedule. Radio columns in local newspapers should be consulted to verify local time.

* One hour earlier than usual time.



They like DOCTORS AT WORK

"I think it was perfect in every respect, and I do not know of one single improvement that could be made."

—A nationally known physician

"I was really very moved by the drama last night . . . I hope and believe that it gives . . . a feeling of the ideal which inspires youngsters . . . who go into medicine."

—A specialist in health education

"This is the first time I have written to a radio station concerning one of its programs . . . Whether or not it was the initial program of DOCTORS AT WORK I do not know. . . . You can be sure I will make sure to hear it again as often as I can."

—A priest

"Your first program was very interesting and helpful. Hope there will be many more to come."

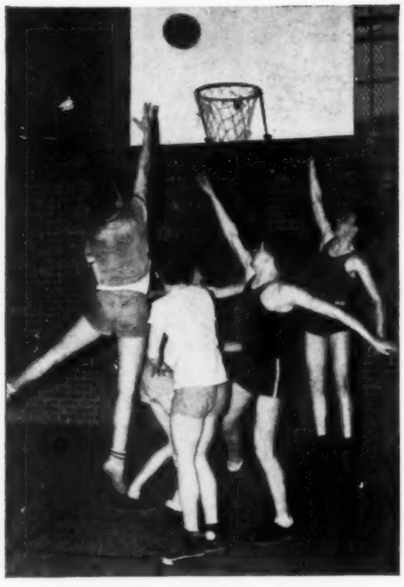
—A fan

"After listening with intense interest to the first of your series of broadcasts called DOCTORS AT WORK last night—I, for one, will be one of your ardent fans from now on."

—A mother

"I listened to your program, DOCTORS AT WORK. It was good and well presented. I hope I can hear all of them."

—A salesman



JOHNNY SCORED THE WINNING BASKET... THANKS TO MOTHER!

He *might* have been out of the game! Only a week ago, he had a bad fall at home, cutting his right knee.

It looked serious for a time. But Mother came to the rescue with Iodine. Iodine's high germicidal value and its proven penetrating power prevented infection, thereby favored quick healing of the wound.

That's why the coach says Mother really won the game!

Mothers of the nation know that the first line of defense in the home is the medicine chest. They know, too, that any scratch, however small, needs the protection of an effective antiseptic such as Iodine—that neglect may cause serious infection. Iodine kills the infecting agent without, at the same time, seriously injuring body tissue.

Make it a habit to have Iodine ready for such emergencies. Apply it promptly to any cut, scratch or insect bite. Be sure, be safe and remember,

YOU CAN DEPEND ON

IODINE

IODINE EDUCATIONAL BUREAU, Inc.
120 BROADWAY - NEW YORK, N.Y.

CANCER CONTEST WINNERS

(*Continued from page 26*)

bert R. Loges, a New York artist, for a crusader's armored hand, holding the pen of knowledge, against a rich, red background. Mr. Loges won first prize last year for an anti-syphilis poster in a competition conducted by New York's Bureau of Social Hygiene. Joseph Binder, another Viennese artist now living in New York, was awarded the fourth prize of $50, for a modern poster in shades of beige and blue with two faces, one turned up towards the light of the cancer control sword, the other down to darkness. In 1939 Mr. Binder won first prize for an official poster for the New York World's Fair. The fifth prize of $25 was awarded to 23 year old Henry Russell of New York, an advertising artist.

Prizes of $10 each were given to Henry J. Stahlhut, New York; Edwin A. Roberts, Teaneck, N. J.; Sandy Governale, Bronx; John Milne Boothroyd, Flushing, New York; and Richard A. Loederer, New York. Selected for honorable mention were posters by Robert Waltz, Indianapolis; Fred Veit, New York; Anton J. Pilversack, New York; Sascha Maurer, New York; Zolton Medvecky, Flushing, New York; Eugene Richard Schwalm, New York; Fernando Texidor, New York; J. Scott Williams, New York; Arthur Smith, New York; Bob Fink, New York; Laverne J. Quackenbush, East Aurora, N. Y.; Lewis J. De Lamarter, Brooklyn; Roy Grumet, Brooklyn; George Brunette, Cleveland; Kenneth Heminger, Cleveland; Mrs. Haig H. Kasabach, New York; G. E. Durant, White Plains, N. Y.; and James Kauffman, Philadelphia.

The conditions of the contest limited and directed the work of competing artists. Entrants were required to use the sword emblem and the words "American Society for the Control of Cancer" and "Enlist in the Women's Field Army." It was also explained that the Society sought a poster to arouse the interest of women in particular. This emphasis was to carry through the idea of the Women's Field Army. A special appeal is made to women because the types of this disease, cancer of the uterus and cancer of the breast, which strike them so frequently are, if treated in time, curable in three out of four instances. Women, too, are usually the private health officers of the family; they have the patience and persistence that is needed to bring information about cancer to every one.

The artists grasped with surprising clarity the purpose of the competition and the spirit needed in such a poster. There were occasional frightening crabs, skeletons, dragons, and bony hands, but by and large the designs were reassuring and hopeful in approach. A variety of things served as focal points for the drawings: microscopes, test tubes, graphs, maps and flags of the United States, several Madam Curies, signs of the zodiac, x-ray tubes, radium, hour glasses, news cameras, clocks, massive feet "stamping out cancer," hands with cloths "wiping out cancer," scarecrows. One charming poster, which received a $10 award, by Edwin A. Roberts of Teaneck, N. J., will probably be used as a cover for a booklet about the Cured Cancer Club. It showed a smiling old lady and above her the words, "I'm just *fine*, thank you."

As a concrete achievement of this competition a fine poster was secured for the 1941 Enlistment Campaign of the Women's Field Army. Perhaps this poster will not satisfy every one—one person's favorite poster may be another's nightmare—but this one has pleased almost every one who has seen it. Many other good posters are available for cancer control work.

More than 800 artists devoted careful thought and work—probably a week's time for each poster—to the subject of cancer control. They and their families have learned an important lesson. Many persons who were not artists saw the publicity about the contest and learned for the first time that cancer in its early stages is often curable. The success of this con-

test, in face of all the excitement centering around the war, suggests that there is a general realization that essentials, such as cancer control, must be continued. Health defense is clearly vital to national defense.

Finally the competition is an illustration of the fact that all may share in cancer control. Teamwork is needed and every one must play on the team. The physician is the captain and quarterback, he calls the signals and directs the play, but we need and are gradually tapping the special skills of the artist, the advertising man, the journalist, the radio writer and the magazine editor. We do not want cheering sections of millions who say "Watch the research worker and the physician. They'll lick cancer." We cannot relax in front of the great battle of science against disease. It is a fact that any one may have cancer and therefore it is important for every one to play a part in controlling it. You who read this article may do your share: familiarize yourself with what is being done in cancer control, write to the American Society for the Control of Cancer, 350 Madison Avenue, New York, for information, and support your state's Division of the Women's Field Army.

INTELLIGENCE QUOTIENT

(Continued from page 40)

existence, interest in the tests disappeared when the members discovered that each must work alone and they could not help each other. In other communities, birth records are not kept and it is, therefore, impossible to compare the child's mental and chronological age. The situations which call for quick and adequate response from an Eskimo or Fiji Islander can not be measured by American tests. Often, too, primitive peoples exhibit a very reasonable objection to being tested in any form, and see no sense at all in sitting patiently over a lot of silly problems.

Nearly all such attempts to measure the intelligence of other groups of people, especially "primitive" people, have been practically fruitless. (They are "primitive" by our definition, of course, not by their own, and only because we like to believe that our "civilization" is presumptively superior, a contention which is certainly debatable.) The simplest supposition and the most tenable so far, is that intelligence is about the same among all humans, each group within itself running the gamut from very low to very high, and that probably the absence of radios and long-range guns is due not to inferior intelligence but to lack of sufficient communication with other peoples, and to other geographical and social factors.

For the most part, this discussion of mental tests has centered on the testing of children. This, indeed, is its most critical function, its aim being primarily to gauge the rate of the child's mental development and its future possibilities. Since it has already been indicated that high school and college success requires a certain minimum intelligence level, it is a wise move to foresee the wisdom of developing the child's other aptitudes if he does not possess this minimum. It may be said in passing, however, that the last few years have seen a greater trek to the so-called upper schools, even the graduate schools. These in turn have been obliged to modify, somewhat, their previous standards to accommodate the increased number of persons who could not otherwise handle the work.

The emphasis in testing adult intelligence lies elsewhere. Concerning what is meant by "adult intelligence" a word is pertinent here, but it is necessary to go back in time.

Mental testing now covers every age group from the cradle to the grave. Infants are measured nearly from birth and already certain standards begin to crystallize as to what behavior may be expected from a normally developing infant. Interestingly enough, precocity exhibited even at this tender age is likely to prove indicative for the future and straight along through his childhood years he will probably test higher than his chronological age. No one can say exactly when intelligence stops growing, but after the age of 14, there seems to be little growth in the case of the "average" child, who at the age of 12 had a mental age of 12 and who at 14 maintains the same ratio. On the other hand, the child who remained mentally ahead of his years is not only ahead of the 14 year level at 14 but probably keeps on growing to some extent until 17 or 18. But even he stops about this time. That this is true is indicated by the fact that college seniors who repeat a test of the same difficulty administered when they were freshmen, produce about the same results. Furthermore, they will probably produce approximately the same results until a very late period in life, and then may show, not a decreased intelligence, but only some decrease in speed. Since the intelligence of any adult is compared to the intelligence of other adults and not to his chronological age, the term "intelligence quotient" is not applicable, although some arbitrary ranking is assigned to indicate the quality of his performance.

In view of the fact, then, that intelligence develops little in most cases after 14, the excitement that prevailed on the discovery of an existing "13 year mental average" during the draft in the First World War was based on the misconception that 30 year old persons possess 30 year intelligences and 40 year old persons have their own unique level. Most parents have been often enough disconcerted by their 14 year old offspring to realize that this level is not to be scoffed at. The passing years can, however, add other things, and occasionally do. Beyond 17, experience, wisdom, understanding and more information with which to think more analytically are anticipated increments which distinguish the adolescent from the adult.

Some adults are, of course, still going to school, and if they have ambitions to do advanced graduate work, they must be able to prove that they have the wherewithal to fulfill the minimum requirements

(Continued on page 79)

Growing Up Together: I

Parents can easily avoid trouble and confusion if they properly evaluate their children's attitudes

By HERMAN M. JAHR

THE SHORTER the spacing between children in a family, the greater is their attachment to one another and to the parents. The membership of such a group appears emotionally more coherent than when the ages of the children vary widely. The reason is plain. Youngsters growing up together share common experiences. Incidents of early years linger, and with advancing age they ripen into a vast storehouse of memories which in later years, even in old age, form a basis for mutual love and respect between the individual members of such a family. Thus, the advantages of short spacings are indisputable.

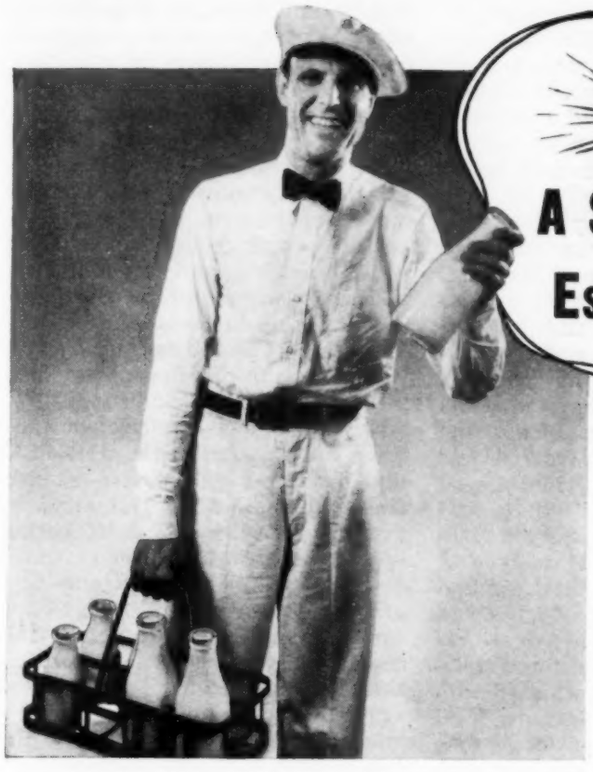
However, the family building program is not a smooth process. In practically every instance where the first child has a respectable mentality he will make an effort to retain the undivided attention which was his until the new baby made its appearance. Prosaic persons label this reluctant yielding of right-of-way by the older child as jealousy. Actually, it is not a form of envy; a young child is little concerned with what the other receives, provided, however, that what goes to his competitor does not constitute a deduction from what he considers his due. But for want of better term, jealousy in a restricted sense is probably a fitting designation. It is an active protest against the newcomer and is usually limited to the second child. Subsequent additions are received with greater tolerance, and rebellion against the third child is unusual. This is a natural phenomenon if we recall that the child is a completely domestic personality the first two or three years of his life, with the greatest interest centered about himself and those with whom he has been in constant association since birth. His entire attachment is limited to his parents and other persons in the household who feed, bathe, dress and play with him. A child who suddenly finds himself dethroned from his high pedestal of undisputed authority soon begins to feel insecure, and the natural response to insecurity is unacceptable conduct.

The form that this unacceptable conduct may take varies with the individual youngster. He may resort to assault on the innocent intruder. Several years ago I saw a 4 year old, high-strung girl who on three occasions pushed her 2 month old brother off the porch. The first two times it was thought to be an accident. The third time every one admitted that it was just a bad habit. In another family, a 3 year old boy showed his resentment by pounding his 3 week old sister on the head with a wooden mallet. Luckily, the mother walked into the room in time to save the infant from serious injury.

Objective punishment is not the only way by which the older child avenges himself on his environment. Often he attempts to reoccupy his dominant importance by reverting to infantile habits or by excessive whining. Not infrequently, every method at the child's command may be utilized.

Ruth was almost 3 years old when her mother returned from the hospital with a baby sister. The Warrens are a family of social standing, of good education and intelligence. However, in this family, as so frequently happens, a smattering of knowledge about "child psychology" clashes with common sense, so necessary for happiness in the child-parent relationship. Ruth was an amiable little girl, proclaimed by her mother to have been reared according to Emily Post. Mrs. Warren's friends were very much impressed with her success in child guidance, and justly so. Ruth was everything that a parent could desire.

For several days after the arrival of the baby, Ruth was happy. "She simply adored the baby." In fact, whenever any one came near the infant, she would protest that it was "her baby," and proceeded to shield her from visitors. At first this was accepted as a gesture of devotion to the newcomer, an expression of love and protection by the older toward the younger. It was not until a few sensitive friends of the family took exception to the girl's prerogative in keeping them from seeing the new baby that the Warrens began to consider the matter. In order to avoid the unpleasantness of a scene when callers came, the child was sent away from the house for the afternoon. However, it was agreed that since Ruth might feel that she was being robbed of parental devotion, and inasmuch as the mother was not



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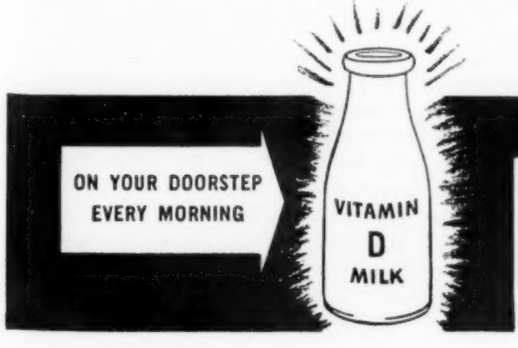

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quite physically able to take an active part in the entertainment, the husband's function was to supply the necessary program of keeping the girl happy and contented during the early evening hours. This was not a bad theory, but it was impractical.

The average young American father, after a day's work can go out and play 18 holes of golf and, especially when he makes a good score, feel refreshed and invigorated. Put the same person with a 3 year old child and he will feel, as Mr. Warren did, exhausted at the end of half an hour. Thus the problem started. Mr. Warren was not long a martyr. He played "daddy" and "mother." He played "hide and seek," and he played "ashman," "mailman," and "milkman." He pretended to be everything that his brilliant little daughter could think of, or that he in his weariness could suggest. Friends and relatives, instead of sympathizing with him, laughed. "The Warrens, of all people! The irony of fate," they said. Nor was Mrs. Warren overindulgent with her husband. She had that every day, she argued.

Ruth developed night-terrors. She began to bite her finger nails. By the end of two months she became what her mother thought was never possible in a sensible household—a problem child! Between gentle sobs and profuse apologies, Mrs. Warren insisted that there must be something radically wrong with her daughter. She did not wish to be unreasonable, but "how can a child who had been so meticulous about her habits wet herself day and night?" That the difficulty was not in the child but in the environment was admitted feebly, but only after every test for kidney function proved normal.

If parents stopped to evaluate the child's attitude with common sense instead of becoming oversolicitous or too impatient, much of this confusion and unhappiness could be avoided. It must be recognized that the youngster has the full right to consider the new baby a competitor and a rival. In his own immature philosophy he senses a threat to his domestic importance. The fact that his parents' love for him is not in any way diminished by the new arrival makes little difference. What affords misgivings is that he has been dispossessed from a comfortable position of dignity and rank, to play second fiddle to a small creature whom he neither invited, nor in any way desired.

The intensity of this feeling varies directly with his previous attachment to his mother. The closer he was to her, the greater the resentment to his new position. Only with thorough recognition of these conditions can parents and their children escape pitfalls that contribute to misunderstandings in the average home, and at times form the nucleus for serious maladjustment. The child who is reared with an attitude of self-dependence will, as a general rule, find little difficulty in adjusting himself to his fraternal role. He is certain, however, to experience a short period of comparative bewilderment until he becomes oriented in the new atmosphere. Any addition to the family requires readjustment, and the coming of a new baby creates the greatest demand upon the child's resourcefulness for the solution of this problem. Given the opportunity, the youngster will think it out for himself, and usually the solution will be favorable to all concerned. A child who has not experienced emotional difficulties the first two years of his life should present no problems of consequence because of the new arrival. Protracted jealousy and fear of competition are usually manifestations of insecurity, occasioned by the removal of the maternal crutch upon which he has been accustomed to lean.

Children who thus become problems may be divided into three groups. First there are the youngsters who, until the baby came, were normal, well adjusted children. However, during their period of orientation, they fell into difficulties because of parental misunderstanding, or impatience, or both. This group does not constitute a serious problem. As a rule, the difficulties are overcome after a time without much damage to the integrity of the individual, or the home.

In the second group are the overprotected children who had been taught, even if unconsciously, to rely solely on their mothers. They are undisciplined. Their capacity for adaptation is small under ordinary circumstances, and during stress they use the only weapon at their disposal—the emotional storm.

They first express their feeling of resentment by an assault on the infant and, as if that were not enough, they start a program of revenge upon the other members of the household through bizarre conduct. The overprotective pattern still prevails. Showers of attention and solicitude are intensified, "because the poor thing feels slighted." In their effort to compensate for what they consider "neglect" of the older child, parents expose themselves to unlimited extortion.

In the third group is the oversensitive child. He is "touchy," easily offended and easily hurt. He is the type who, under proper cultivation and sensible training, is in later years found in that fortunate sector of humanity endowed with a capacity for social graces and enjoyment of the better things in life. Misguided, he grows up with the unfortunate attitude that, in spite of his fine qualities, somehow he cannot make himself understood.

In this, as in all phases of health, prevention is the most effective way in which emotional hazards may be avoided. The importance of a sensible program in the early months of the life of a child is now well recognized by most parents. The healthy child will, after a brief period of orientation, overcome his jealousy toward the infant by adapting himself to the competitive system in the family. All he asks for is time and tolerance during the precarious period of mental strategy. During this period the parents need show no concern about the youngster's behavior. Remarks which in any way express a negative attitude toward the infant must never be repeated in the child's presence. On the other hand, any expression in favor of the baby should receive praise. However, exuberance and gushing over the "little man's" charitable disposition have no place in this program, because they tend to overemphasize a normal situation. Nor should a child be pestered with the question of how much he loves his little brother or sister, particularly in the first few weeks after the infant has arrived. It is a most exceptional child who, in spite of his statement to the contrary, has much enthusiasm for a rival infant. Parents should never increase their attention and solicitude toward the youngster in order to convince him that they still love him. Any effort toward patronage only serves to create suspicion in his young mind. The child should be given the opportunity of helping, in whatever way he may be capable, to do things for the infant. In that way he will feel not only proud to serve but, equally important, he will also acquire a personal interest in the newcomer and thus become attached to him.

When the child shows difficulties in adjusting himself to the new scheme of things, it is necessary to utilize tact and sympathy, but care must be exercised not to overwhelm him with kindness. The youngster must accept the fact that the infant is a part of the family and that he is entitled to the blessings of the domestic haven on a par with every other member of that family. The arrangement is a permanent one, and any impression to the contrary invites later complications.

The infant's virtues must never be used as an example to be followed by the older child. The model is none too popular with him as it is, and any boost of the competitor's stock, regardless of purpose, only adds irritation to pain. Unconsciously, he is trying to duplicate the infantile pattern as witnessed by his regressive behavior: bedwetting, regurgitation of food, baby talk, etc.—a pattern distinctly annoying to his parents, yet a pattern which too often brings sizeable premiums in the form of attention.

While parental conduct toward the older child may not often be responsible for the creation of the problem, it usually serves to maintain it and, through misunderstanding, aggravate it. Actually, the family-building program, provided that parents pursue a logical course, can be free from these annoyances. The logical course includes a policy of gentleness combined with firmness toward the reactions of the older child. This policy presupposes a tolerant yet not necessarily a yielding attitude on the part of the parents and others who constitute the family circle. Regardless of inconveniences, irregular behavior must be accepted calmly and interpreted as an attempt on the part of the youngster to preserve his standing. This is not only a justifiable demand, but indeed a healthy trait that to some degree deserves encouragement.

It is of utmost importance to keep the older child occupied. If he is

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busy with his own affairs, he has neither time nor inclination to worry about the necessary division of parental loyalties. Play material, suitable to his age and comprehension, may be utilized freely but the child must never be aware of being coaxed into activity. The greater his capacity for self amusement, the less the likelihood of his becoming or remaining a problem. Nor should a child ever be urged to leave the house because of mother's preoccupation with the baby. He should be encouraged to play with other children as much as conditions permit, but only for his sake and not solely for the convenience or benefit of his competitor.

Punishment with the view of driving the child into submission has no place in dealing with these problems. Furthermore, tact and precaution seldom fail in the solution of the difficulty. It is obvious, however, that when the youngster's behavior endangers the safety of the infant, means must be taken to protect him from violence. Reprisals, when employed against the offender, should be punished as soon as the offense is determined, and apologies for such deserved punishment only defeat the purpose. When the child is punished, he should be fully aware of the reason in order that he may learn to associate the act with his own personal discomfort. Neither the offense nor the consequences should receive further review or discussion.

Many of the difficulties resulting from the coming of the second baby into the home are preventable. Prevention, however, is contingent upon a wholesome disposition on the part of both parents, and the child who, to a great extent, acquires his disposition by an imitative process from those who are near and dear to him in his infancy and early childhood. Unfortunately, in these periods of social and economic strains and stresses, it is difficult for grown-ups themselves to maintain their equilibrium. However, a tolerant and understanding attitude toward the youngster in his struggles will go far to help him in his reorientation and subsequent emotional rehabilitation.

Next month Herman M. Jahr will conclude this article by considering the problem as it relates to an older child.

Fallacies, Fantasies and Facts

(*Continued from page 17*)

sneezing should, on the contrary, mean the continuity of life. This explanation is still valid when such expressions as "God bless you!" or "Gesundheit!" are being used. The spreading of the superstitious belief regarding sneezing with little variation is well nigh universal.

The Hindus have their own ideas about sternutation. If a person sneezes on another's back, he pinches the back so as to lessen the evil effects. Sneezing with the face turned toward the west is thought to be auspicious, but doing so while working is an ill omen.

Marco Polo tells his experience with the Brahmans who believe sneezing is an omen for a successful trip, should any one sneeze as they are about to depart. But if the sneezing does not take place, they remain seated until they feel it is safe to leave.

The inhabitants of New Zealand look upon sneezing as prevention of evil. If a child sneezes when he receives his name, the officiating priest at once holds the wooden image of an idol to his ear and sings some mystic words. We do the same thing with an inhaler, hoping to recover soon.

Many are the senseless beliefs which are associated with the act of sneezing. In Chinese writings this version can be found: A sneeze on New Year's Eve is ominous for the coming year. To offset this the sneezer must visit three families of different surnames and buy from each a small tortoise shaped cake, to be eaten before midnight.

Among the Japanese folklore, one sneeze indicates that some one is praising the sneezer; two sneezes betoken censure or disparagement, and three or more means simply that a person has taken cold for which he must seek a remedy. The Greeks, Romans and Mohammedans evaluate sneezing from a health or religious point of view. Hippocrates considered sternutation dangerous in pulmonary affections, but useful in any other disease. Celsus taught that sneezing during convalescence was auspicious. The Mohammedans think it is a sacred duty to reply to a sneeze: "Praise be to Allah!"

The American Indians believe that one sneeze means that the sneezer has been called either by a son or wife, or some intimate friend. Hence, he at once exclaims "My son!" But if he sneezes twice, he says "My son and his mother!" Today, this thought is part of our custom for it would be impolite to remain silent in the presence of a person who has sneezed.

In the light of the present knowledge of allergy, periodic sneezing is recognized as a disorder and health salutations should be supplanted by medical care.

The inside of the nose is so constituted that any departure from normal affects its delicate mechanism. In some cases, atmospheric changes will register its effects to a noticeable degree.

The Schneiderian membrane (lining of the nose) is a highly specialized membrane whose defense mechanism against bacteria is mechanical and, therefore, protective. The nasal chambers are endowed with minute hair brushes (ciliary processes) which are the first defense against the common cold.

The vibratory area, by means of an effective beating motion of these hairs, propel the mucin from the tip of the nose to the posterior part of the throat (nasopharynx). These movements are uninterrupted and harmonious. The surface layer of cells (epithelial) is covered by a relatively thin layer of mucus which acts as a transport through the medium of the hair brushes (ciliary movement) and thus secretions flow from the back part of the throat to the mouth and finally toward the gullet and the gastro-intestinal tract. This is the main avenue of the transportation of the mucus which enmeshes numerous bacteria. Persistent chilling, bad aeration, chemical irritants and faulty metabolism greatly modify the movement of the ciliated epithelium, recognized as a highly specialized structure. The invasion of an organism results in an outpouring of white cells (leuko-

(*Continued on page 78*)

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Six Rules of Play

Your play is what you make it. Learn how to seek both cultural and esthetic values, and relate them to the wholesome values of life

By JOHN EISELE DAVIS

"SAY, DAD, you know that's a funny teacher. After we lost the basketball game at school today we felt badly, but he didn't seem to worry much. He even said wining is not the main purpose of playing a game. Why do people play games?"

Modern education is answering this question today. Educators are emphasizing a new feature in play, new aims which, while they may appear strange to the boy who has been schooled in the intensely competitive aspects of play that ascribes all power to the winning ideal, promise to make recreation one of the most valuable instruments of social education. Educational and mental hygienic aims combine today to emphasize six rules of modern play:

(1) "Play with, rather than against, people." This simply means that the child gets more out of his play experiences if he accepts his playmates as friends rather than enemies. The child who is left to his own devices will seek these friendly relationships. The onlookers, however, clamor for a winner and often distort the direction of the activity into undesirable channels. The greatest and most lasting satisfaction comes when all players progress together, rather than from the personal aggrandizement which is placed on the head of the lone winner. The aphorism: "All the world loves a winner," simply does not come true on the playground. Children are jealous of their playmates who are constantly paraded at the head of the procession simply because they are the best athletes. Children usually feel that they should receive the encouragement which comes from the recognition and approval of their parents, teachers and playmates. Furthermore, education is getting away from the innuendos that suc-

Educators are emphasizing a new feature in play, new aims which are promising to make physical recreation one of the most valuable instruments of social education.

Keystone View

cess can be measured by proficiency in any one subject, whether it be mathematics or athletics. The child must be prepared to enter a world of many relationships, a world of group feeling and concerted action. The child who can create and nourish such cooperative attitudes is better prepared to succeed in a social environment.

(2) "Learn to play for people. Be helpful." Alert play counselors emphasize the zestful and satisfying cooperative conduct which may be so naturally developed through team play. When unnecessary roughness had relegated a player to the sidelines, the old-style football coach might have secretly exulted in the fighting proclivities of his protégé. The modern teacher is less likely to confuse such actions with educational sportsmanship. He will remind the self-centered, overly egotistic pupil that there are higher values in the game than knocking out his opponent; that the same qualities of friendly coordination which characterize his natural relationship to his own team can be most advantageously applied in his relationship with the opposing team. It is simply a matter of setting before him the most satisfying and sensible goal, a goal which is broadly social rather than narrowly individual. This does not mean, however, that we are to take the spirit out of the game. We are reminded of the statement that our "Antagonist may prove to be our best friend."

(3) "Seek goals based upon your ability. Do not reach for the stars." One of the tragedies of some formal education results from "the pea in the pod" objective—the child must fit into the educational regimen. Physical education has a significant opportunity to avoid this pitfall. The many forms of play, its motor gradations and natural appeal, all combine to offer the child something he can do with deep and wholesome satisfaction. It is the responsibility of the home and the school to see that his play activities are suited to his unique capacity and that he is not expected to meet standards set for some one else, or established for some composite group in which his individuality would be stifled. The wise play counselor will determine the type of play which is not only suited to the motor capacity of the individual but also holds the necessary ele-

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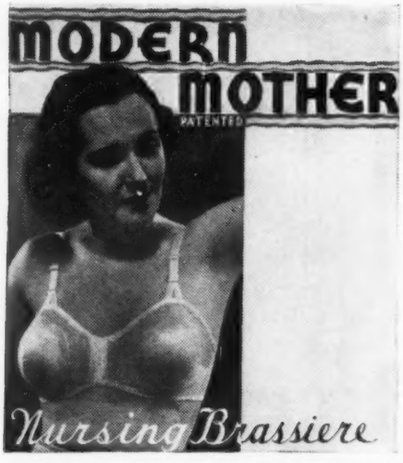

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ments of interest. Play is a heightening adventure and can never be divorced from the delicate shades of interest. Play vitalized by such sensible goals will develop its important educational possibilities in the creation of strong bodies and happy personalities.

(4) "Develop some physical skill." Pursue a suitable hobby so that the mind and the body may develop in harmony. Mental hygiene clinics are reporting many cases in which broken lives have been caused by "housing an overactive mind in an underactive body." Nervous tension resulting from excessive preoccupation in business routine day after day can be fundamentally helped by the simple adoption of some physical hobby which will redirect latent energies into constructive as well as pleasurable channels. The tired business man is, in most cases, simply tired of doing the same thing in the same way every day, and recreation which will afford a new direction for his energies may be his salvation.

The importance of teaching the child to develop a motor skill can hardly be overestimated. In the first place, the ability to use muscles skillfully has deep meaning in the child's world of understanding and interest. The physical act of hitting a baseball, of turning a somersault, of shooting marbles, of riding a horse, all connote in the child's mind a glorious feeling of self control and increasing control of his environment. Purely intellectual accomplishments do not compare with such muscle control in the child's mind. The significance of this emphasis upon body control in the life of the child goes even further into the sphere of mental health. Psychiatrists are calling attention to the value of well selected recreational activities in giving the child a sense of security and well being, feelings which are most important in the development of a wholesome and healthful personality. Teachers of physical education cite many instances of the timid child who gradually approaches life with the aid of some motor skill, and is thus enabled to grow into more aggressive contact with his fellows. One of the most effective methods in the modern therapeutic treatment of the mentally ill utilizes suitable sports and exercises which afford opportunity for the development of motor skills as a basis for mental readjustment.

(5) "Select a sport which you can play in later life." Life ends at 40 for many individuals who have learned to play in childhood, but have found their early play activities too strenuous for advancing age. In the past a child's play was left largely to chance. He selected the most thrilling sports, with little or no educational guidance as to their suitability for use in later life. Now, however, the child is being taught sports which may serve to brighten and vitalize his manhood as well as his early days. This does not mean that he should not play football or basketball, since these sports are too strenuous for middle age, but it does mean that a child should be taught other games, in addition to these zestful activities, which can be played in later life. Volley ball is an ideal group game for both boys and girls which can be developed into a most scientific group activity. Because of its nonstrenuous nature, it can be played in middle age. Golf may be nature's tonic for every decade of life and such sedative and relaxing hobbies as fishing have their contributions not only to the adventuresome stages of childhood but to the philosophic perambulations of old age. It is well to realize that play provides an ideal release for the desires and hopes at all ages, and play activities, to reach their greatest possibilities for health and happiness, should be conditioned to the strength, agility and interest of every age. As Walter Pitkin reminds us, recreation for middle age does not mean that one must stand on his head, but it does mean that one must use his head in a wise selection of games and exercises.

(6) "Play with your mind as well as your feet and hands; find adventure in play experiences." Adults can learn much of the true nature of play by observing children. In play, the child experiments and inquires, examines and plans, sees and hopes. He seeks to tell the story of his life through the modifiable structure of play. Thus, play is seen not only as a mirror of the child's life but also as an indication of what it may become. Modern educators are finding in play ideal mediums for teaching lessons vitally related to the child's most wholesome development.

The child should be assisted to find lessons in his play that will not only broaden his general knowledge but will also aid in the development of attitudes of disciplined aggression, courage, humility, and the many refinements of social intercourse. Those seeking such educational values in play will discern also a vital relationship to culture and art. The fighting aspect of play is giving way to the cooperative forms of modern educational practice. Play is closely related to art. The release of artistic impulses through the fingertips as one plays a musical instrument may not be so far divorced from the beautifully coordinated impulses released from the body as one coordinates mind and muscle in executing a smooth stroke with the tennis racquet. The distorted idea that mental processes are superior and physical processes are comparatively inferior has done much to rob play of its artistic birthright. While the child should be taught the beauty and the validity of the body, he should be encouraged to use his mind in his play so that "excursions of the mind" may lead him into cultural as well as physical appreciations. The alert play counselor can discern not only the affect of physical movement in the child at play but also something of the subtle affect of nature's artistic contributions in the green fields and the smiling skies. The dance probably provides one of the best examples of recreation raised to the power of art.

A football coach in explanation of the effective play of one of his stars, went on to say that he had "play sense." What is this "play sense" which assures the individual a warm place in the hearts of the spectator public? Obviously, this concept is undergoing a significant change of meaning. The old ideal of this quality was to outtrick your opponent and thus gain an advantage. Today, the idea of "play sense" is to gain the approbation of the crowd through brilliant and unselfish play. This does not mean that the player must avoid aggressive tactics, but it does mean that he must get away from the idea that playing is a battle, and the fighting aspect of the game is its reason for existence.

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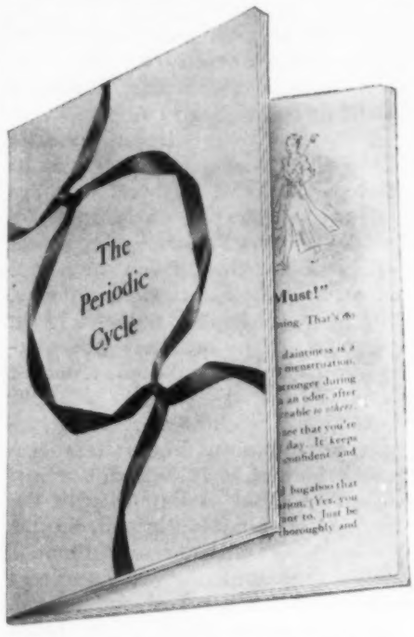

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Fallacies, Fantasies and Facts

(*Continued from page 72*)

cytic exudation) and drainage of free secretions of pus from the nose and sinuses is commonly diagnosed as the ordinary head cold.

Many persons who share the thought that one of the ways to prevent colds is by raising the indoor temperature overlook the fact that some become distressed by heat because of an acquired sensitivity to a physical allergy. Moreover, the ciliary movements in the nose (hair brushes) are perceptibly slower in the presence of dry heat.

It appears to be a common practice to maintain house temperatures of about 70 F., without regard for the amount of humidity in the air. Ellsworth Huntington, in his book "Civilization and Climate," states that the room temperature conducive to the best mental activity is about 63 F. The brain worker reaches the maximum efficiency when the indoor temperature stays at that level. It is generally recognized that the humidity in most houses is too low, especially when the heating is accomplished by the distribution of steam in pipes. It would probably be best to provide suitable equipment in houses to keep the humidity of the air at a point of 50 per cent of saturation. This percentage of humidity can be maintained satisfactorily without causing condensation on the window glass. By increasing the air velocity inside the house, a higher percentage of humidity can be maintained without condensation. In winter it is not unusual, however, to find humidities as low as 10 to 20 per cent of saturation in many homes.

The variability of outside temperature affects the interior of the nose, but the ability of the inner organs of the nose to contract or dilate as the outside temperature varies makes it a self-regulating mechanism which accommodates itself to the inspired air. Its precision to carry on its own humidification stamps it a self air conditioning system, accomplished by virtue of its enormous supply of clustered mucous and serous glands. The action of these glands is to provide a watery discharge, the excess of which evaporates or jells into a blanket of mucus and helps to anchor the remaining bacteria and foreign particles, thus acting as a filter. When the above functions are interrupted, marked changes in the tissues are seen: they change color and lose their function.

Self-medication of head colds often aggravates a simple acute cold into a chronic one. The indiscriminate use of nasal sprays for self-treatment may be injurious to the delicate membranes of the nose and throat. The nasal mechanism is upset by use of these drugs; self-diagnosis and self-treatment pay poor dividends. But still many persons buy drugs in the form of oily sprays which do more harm than good.

Out of the melting pot of medicine come many legends and fantasies. But one question in particular returns each summer to plague the ear, nose, and throat specialist: When is the proper time to have tonsils and adenoids removed? Many persons still believe that once the vacation season is over any thought of removing tonsils and adenoids involve grave risks. Not infrequently the thought that these operations are unwise outside of the specified summer months outweighs any other urgent indication. When all factors are taken into consideration, the cooler the months the more agreeable it is for the patient to have the work done. Fortunately, the view held that the summer months is the most auspicious time to remove tonsils and adenoids is not held by the majority of the ear, nose, and throat specialists in this country.

In some geographic locations where the sweltering heat continues during the greater part of the summer, the atmosphere is surcharged with high humidity and patients who are subjected to an operation inhale larger amounts of the anesthetic. Then, too, it must be remembered that the upper air passages bear the brunt of the pollination season, for each summer brings epidemics which it is not always possible to avoid. Infantile paralysis is more prevalent during the hay fever season than at any other time. More and more,

each year, the statistical reports show that those who have submitted to tonsil and adenoid operations in the presence of infantile paralysis unwittingly run the risk of adding to the increasing susceptibility to the disease. Since this virus germ can gain entrance through throat passage during the presence of epidemics of infantile paralysis, the susceptibility to this form of infection is heightened and for this reason it is unwise to incur additional risks.

In the summer, when the operating room is hot, the practice of enveloping the patient in mackintosh sheeting promotes a flow of perspiration so that an appreciable amount of body fluids is eventually lost. Due to the presence of throat soreness the patient is restricted to a liquid diet, the first day, which adds to the already depleted body fluids. In consequence, the blood becomes less alkaline and acidosis, as a factor, must be considered. Not infrequently the patient develops a "sick" stomach, with nausea and vomiting. A postoperative throat adds to the unpleasantness and the patient becomes anxious and apprehensive.

Particularly when a hemorrhage takes place, the corresponding diminution of oxygen follows loss of fluids which aggravates further body dehydration. Children during the vacation period are less regular in their eating and sleeping habits which does not add to their physical fitness when submitting them to tonsil surgery. The humid days of summer are not conducive to the best comfort of the patient.

There are those who suffer from suppressed desires. And whether the subject is a prize fight, a horse race, or an illness, they have "made to order" opinions which are predicated on pure fantasies and fallacies but seldom on facts.

These individuals enjoy handing out free advice. They are adults who love to live their childhood days over again by playing the part of physician or nurse to some unfortunate patient. Their infantile ego never deserts them. From such sources emanate the idea that wax in the ears is associated with lack of cleanliness; that a running ear is best treated when left to its own resources; that cold weather induces head colds, and that summer is the best time for tonsil surgery.

Intelligence Quotient (*Continued from page 67*)

and to bring, if not honor, at least no disgrace on the head of Alma Mater. For this purpose the tests are usually long, running to five or six hours, and may include, in addition to items measuring speed, level and range, some factual questions as an index of general alertness to surroundings and of an ability to retain and relate information. In some fields of work, all these capacities are necessary, and without them the load becomes too heavy to carry.

On the whole, most persons have long since discovered that it is not essential to "go through the ceiling" of an intelligence test to lead a good life. As a matter of fact it is possible to make lots of money and be a social success with a test score that indicates an embarrassing minimum of what the test is supposed to test. And the obverse is equally true. With lots of this same ingredient, but without the will, the self-discipline, and the purpose, an Aristotle could be a failure.

REEDUCATING A BOY TO WALK

A "walker" similar to an old fashioned baby stroller speedily solved the problem of teaching a 6 year old boy to walk again after both thigh bones had been fractured in an automobile accident, R. H. Gray, La Crosse, Wis., reports in the *Wisconsin Medical Journal.*

Because both legs had been fractured, crutches could not be used. A walker was therefore constructed, using a bicycle saddle as a seat. After the plaster casts were removed from the legs, the child was placed in the walker and soon was rolling it from room to room, resting on the seat as he chose. He soon was able to discard the "walker" entirely and the fractures healed satisfactorily.

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Medical News OF THE MONTH

Skin Eruptions from Nail Polish

Because skin eruptions due to nail polish are more likely to occur about the face than the nail folds or other parts of the hands, many cases may not be properly diagnosed, Lester Hollander, Pittsburgh, observes in *The Journal* of the American Medical Association.

He reports three cases in which the eyelids and areas of the chin below the lower lip were involved. "This must have occurred by contact," he says, "such as straightening the eyebrows with the lacquered nails and possibly by the habit of playing with the areas on the chin." In one case the left side of the neck was involved, due to the patient's habit of doubling her hands and keeping her nails against her neck during sleep. In no case were there eruptions on the hands.

Transfusion of Bone Marrow

The simple process of injecting healthy bone marrow (the soft material which fills the bone cavities and takes part in the building of blood) into that of the breast bone of patients with marrow deficiencies may lend itself to the solution of many problems of blood disorders, Maurice Morrison and A. A. Samwick, Brooklyn, N. Y., suggest in *The Journal* of the American Medical Association.

Blood cells develop in the bone marrow and are discharged into the blood stream when mature. Thus there is a direct relationship between disturbances of the marrow and of blood formation.

The authors report improvement, following three injections of bone marrow from healthy donors, of a patient with a deficiency of all the components of the bone marrow. The disease, although comparatively rare, is a very serious one. The injections were made, the authors say, on the theory that healthy marrow might supply some blood forming quality lacking in the patient's marrow and thus stimulate normal development of its various constituents.

"Supplying a specific deficiency seems to be the order of the day in the treatment of certain anemias," they explain. "A similar rationale might underlie the treatment of other blood dyscrasias (abnormal composition of the blood)."

Their technic of injecting marrow into the breast bone with a syringe is simple and is applicable to other blood disorders, they declare. An important point in the technic is speed, as the marrow coagulates rapidly when exposed to air.

Sale of Raw Milk

Unless county and state authorities cooperate with city health officials in controlling the sale of raw milk, outbreaks of milk-borne infection are bound to occur, *The Journal* of the American Medical Association declares in an editorial.

"In 1932," the editorial states, "*The Journal* condemned the sale and use of bootleg milk, namely milk offered for sale outside municipal limits and therefore not subject to the regulations governing the sale of milk within the municipality. Several health officers at that time were confronted with the health hazard developed by the sale of milk at roadside stands to residents of nearby cities. Often it came from farms of such unsanitary conditions that their product could not be offered within the city limits.

"Studies by the United States Public Health Service and the former American Child Health Association have demonstrated again and again that milk-borne epidemics are due almost exclusively to raw milk supplies. The sale of raw milk continues in spite of the fact that pasteurized milk is safer. Certainly there is no established evidence to indicate that raw milk is any more desirable nutritionally than pasteurized milk.

"Even today bootleg milk stations, also called 'jug stations,' still operate outside the corporate limits and consequently outside the jurisdiction of some cities in which only pasteurized milk, other than certified, is legal. When every possible legal precaution has been taken to protect a community against potential dangers in raw milk, and milk consumers persist in circumventing the local regulations by buying milk from unsupervised sources, the occurrence of milk-borne outbreaks of communicable disease cannot be attributed to any failure on the part of the health authorities."

Sulfapyridine Dosage for Pneumonia in Children

The use of a single dose of sulfapyridine for pneumonia in children simplified the treatment and decreased reactions to the drug, and at the same time controlled the disease as well as multiple doses, Louis Platt, New York, states in the *American Journal of Diseases of Children* in reporting his experience with 41 children who received a single dose, and 24 who received multiple doses of sulfapyridine.

"Since the introduction of sulfapyridine for the treatment of pneumonia in children, the recommended duration of treatment has steadily decreased, and the estimates of effective levels in the blood have been revised downward," he says. "At present the drug is usually given in divided doses daily for from two to four days. It was decided to determine the levels in the blood, and to evaluate the clinical results following the administration of one large dose of sulfapyridine, to see whether effective levels in the blood, maintained long enough to produce a cure, would result.

"In the cases included in this study the single dose method gave satisfactory levels in the blood in most cases, and the clinical results were as good as, if not better than, those in the group that received multiple doses. If the results are as good, it would seem desirable to adopt a single dose method, for the following reasons:

"(1) It is simpler, and interferes less with the child's rest and sleep during the time when he is most ill. It is also less demanding on the nursing staff.

"(2) It decreases the incidence of the most common toxic effect, nausea and vomiting."